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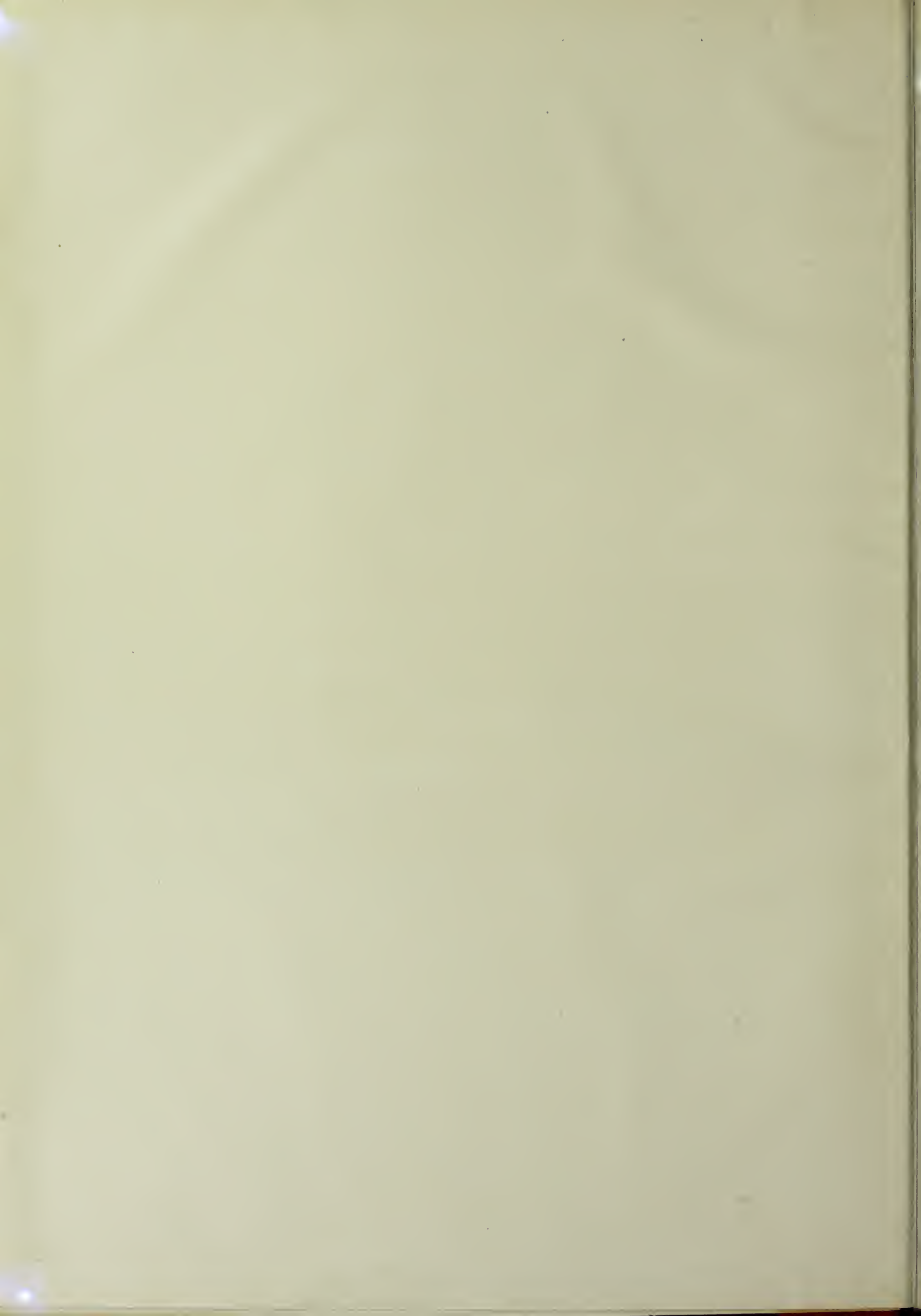






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THE

PACIFIC RURAL PRESS

1575

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 1.

SAN FRANCISCO, SATURDAY, JANUARY 1, 1898.

TWENTY-SEVENTH YEAR.
Office, 330 Market Street.

Garden Irrigation.

We gave recently a view of Mr. Berwick's irrigated garden, equipped with a home-made reservoir, which has done a score of years' service already and has a future before it besides. A reservoir is a very desirable thing for storage, for collection of a small supply into a good volume, and for other reasons. There are, however, many places in which a reservoir is not necessary, either because water is always available in large head, as is the case with good irrigation systems, or when natural stream or pond keeps it constantly within reach. Then other

wide and 4 inches long, so that the belt will have a flat surface on one side and the other crossed with the blocks. When this is placed in the box and over the pulleys at each end fasten the box securely in an inclined position, with the lower end in the water, turn the upper pulley by a hand crank or a small belt from a source of power, and the blocks will elevate the water and shoot it out from the top of the box in fine style. For a short lift this apparatus discharges quite a large volume of water with comparatively little power.

Sometimes the Chinese pump is worked by a horse power with tumbling rod, as shown in the picture.

tion of Farmers' Clubs met at Lansing, Dec. 14. The association represents 100 clubs, with a membership of 6000. In the State at large there are 300 clubs, with a membership of 20,000. It is expected all will be gathered into the association before long.

Farmers' Institutes.

A meeting which will probably rank as the greatest Farmers' Institute of the year will be held at Los Angeles, January 3, 4 and 5, in the hall of the Chamber of Commerce. There will be three full days' work—three sessions a day—and the programme brings to



RAISING WATER FOR IRRIGATION PURPOSES WITH CHINESE PUMP AND HORSE POWER.

arrangements than that of a reservoir are called for. In his book on "California Vegetables," just published by the RURAL PRESS, Prof. Wickson discusses various methods of taking water from adjacent permanent supplies. One of the most serviceable, where the lift of water is short, is the so-called Chinese pump, and the illustration on this page, showing a garden in Kern county irrigated with a Chinese pump from an adjacent stream, is reproduced from "California Vegetables." The Chinese pump has long been used in California. It is a modified "Persian wheel," and is so simple that it can be home-made with old threshing machine gearing or other mechanical junk. It consists of an endless belt working like the "elevator" or "straw carrier" of a threshing machine. For instance, take an old machine belt 8 inches wide and 20 feet long, or sew together strong canvas to make one. Make a box or trough about 9 feet long, 8 inches wide and 6 inches deep, inside measurement, with no ends nor cover. Rig at each end of this box a wheel or pulley, over which the endless belt can run. Fasten to the belt, a few inches apart, blocks scant 8 inches

The satisfactory service of the pump is shown in the garden growths in the background on the left.

Of the relations between rainfall and irrigation gardening in California, Prof. Wickson says in one place: "By due understanding and employment of the characters of the natural growing season and of the soil in each locality, it is possible to produce a great wealth and variety of vegetables in most parts of the State without irrigation. In some parts succession or rotation can be carried through the year by the most intelligent cultivation to prevent evaporation or by the use of land naturally and continuously moistened by underflow. Still, the far greater area of the State will not give satisfactory vegetable supply without additions to rainfall, and the irrigated garden should therefore be the end in view in most of our farm planning. Fortunately, this is not nearly so difficult to attain as is commonly thought, and, if the farm-architect has the will to work, he will not long lack the water to insure the perfection of his desires in his home garden."

THE annual convention of the Michigan Associa-

the front the most important agricultural questions in southern California and some of the best known speakers. The meeting is one of the series arranged by the University of California in the promotion of agricultural interests, and Prof. Hilgard, Prof. Cook and J. W. Mills will be present as University representatives. The list of meetings arranged by the University for the months of January and February is as follows:

JANUARY.—Los Angeles, 3, 4, 5; West Side, 11, 12; Temperance Colony, 13; Visalia, 14, 15; Elk Grove, 18, 19; Loomis, 19, 20; Grass Valley, 21, 22; Livermore, 24, 25; Woodland, 26, 27; Oroville, 28, 29; Ione, 31.

FEBRUARY.—Ione, 1; Kingsburg, 3; Modesto, 4, 5; Guinda, 7, 8; Vacaville, 9, 10; Martinez, 11, 12; Porterville, 15, 16; Dinuba, 17, 18; Sanger, 19; Lompoc, 23, 24; Arroyo Grande, 25, 26.

The above list is as complete as it can be made at this date. There may be a few additions announced within these two months if arrangements are perfected for them. The work will continue all through the spring months in about the same amount as for the two months named.

PACIFIC RURAL PRESS.

Office, Clark Building No. 330 Market St., San Francisco, Cal.
Telephone, Clay 204.

TWO DOLLARS PER YEAR IN ADVANCE.

Advertising rates made known on application.

Any subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

Registered at S. F. Postoffice as second-class mail matter.

ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, January 1, 1898.

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BUSINESS ANNOUNCEMENTS.

(New this issue.)

Live Stock and Poultry—Wm. Niles & Co., Los Angeles, Cal. 12
Hoard's Dairyman—Ft. Atkinson, Wis. 12
Oliver Orchard Plows—Oliver Chilled Plow Works 13
Bean Spray Pump—Bean Spray Pump Co., Los Gatos, Cal. 15
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The Week.

The Weather.

The following data for the week ending 5 A. M. Wednesday, Dec. 29, 1897, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Last Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | .05 | 15.37 | 20.54 | 16.05 | 36 | 60 |
| Red Bluff..... | 00 | 6.06 | 11.11 | 10.03 | 26 | 64 |
| Sacramento..... | 00 | 4.38 | 6.10 | 7.14 | 56 | 28 |
| San Francisco..... | 7 | 4.07 | 10.25 | 8.58 | 39 | 60 |
| Fresno..... | 00 | 1.99 | 3.99 | 3.67 | 28 | 60 |
| San Luis Obispo..... | 00 | 1.58 | 7.60 | 5.24 | 24 | 78 |
| Los Angeles..... | 00 | 2.52 | 5.09 | 5.02 | 36 | 66 |
| San Diego..... | 00 | 1.41 | 4.25 | 3.68 | 36 | 78 |
| Yuma..... | 00 | 0.85 | 1.98 | 1.66 | 30 | 74 |

*Up to 5 P. M. Dec. 28; furnished by J. A. Barwick.

The Produce Markets.

It has not been a very notable week in the home produce markets. In wheat, the trading in options has been affected by the uncertain conditions of the Eastern markets; and in the field of actual business there has been the universal dullness which always prevails during holiday week. The average American grain dealer is not so sentimental as to care whether Christmas keeps or not; but in England they lie off and make merry from the beginning to the end of the week, and the American dealers are left both without orders and without quotations. The spot market for wheat is about 50 cents per ton better than a week ago; but there is very little selling. Buyers are not anxious because there is a scarcity of ships, and sellers are not eager because they are hopeful of better conditions later on. Other grains are practically unchanged. Oats are locally weak, due to large receipts, which load up the market and make sales slow.

There has been fairly good business throughout the week in dried fruits, on both foreign and domestic account, at ruling quotations. It is evident that there will be an outlet at present prices or something better for all really good stock on hand, both as to prunes and all other varieties; but the market is surfeited with inferior stock—damaged raisins, small prunes and inferior grades of miscellaneous fruits. How all the offerings of this stuff are to be worked off does not yet appear. It is due in part to this large supply of inferior goods that the market has been so bad through these several weeks past.

Meats are firm all along the line, though the higher prices demanded for beef and mutton have served to limit the sales of these staples. It is clear that when prices advance above a certain point the San Francisco consumptive demand drops off, and the reason is that abundant supplies of poultry at moderate prices offer a ready and acceptable substitute to the prudent and economical consumer.

The Klondike prospect is an ever-present influence in the market, and is responsible for a good deal of speculative dealing, especially in one grade of beans. All kinds of opinions prevail as to the vol-

ume and value of this Yukon trade later in the marketing season; but nobody is really wise enough to know anything about it. Whatever the event may be, the California producer may, to some extent, thank the Klondike fever for a generally better market condition than would otherwise prevail.

History of the Silo.

TO THE EDITOR:—I still think I am not wrong in my idea of the Germans being the first to discover the value of Indian corn for silage. At the time I thought first of building a silo I went over the matter carefully and certainly that idea was deeply ground into me. In looking at present authorities, I find, in "Woll on Silage," on page 7: "In the sixties over 2000 tons of Indian corn was thus made into silage annually in a single small German province where dairying was an important industry." Goffart, a French farmer, in the year 1877, published a book on corn culture and other green crops for the silo. I have a revised edition of his book. He does not claim to have been the first—only to be a perfecter of the process. J. B. Brown translated this book, and it is, as far as I can learn, the first publication on the subject.

M. D. ESHLEMAN.

[We believe now that Miss Eshleman is right as to the German origination of the method with Indian corn. It was the knowledge of priority of French publication which led to the comment we recently made on the subject.—Ed.]

Poland-Chinas and Berkshires.

TO THE EDITOR:—Mr. Gallup's essay before the Farmers' Institute at Fresno will not hold water. He gives no facts nor figures for it. He says the Poland-China is given the first place among swine, and all the leading papers recognize it as king of all breeds. Before the Illinois State Fair in 1897 the Berkshire breeders challenged all breeders of swine to show ten head of Berkshires against any breed for \$100 (one hundred dollars). The challenge was not accepted by the Poland-China breeders, (who were out in great force), or any other breeder. At the California State Fair in 1897 I won first prize and sweepstakes on Berkshire boar, first prize and sweepstakes on Poland-Chinas. I have sold my Poland-Chinas and breed Berkshires believing them to be the best.

Now I will challenge Mr. Gallup to show six Berkshires against six of his Poland-Chinas, under three months, at the California State Fair of 1898, the State Agricultural Society to select the judges.

THOS. WAITE, Breeder of Berkshires.

Perkins, Sacramento county.

[We are glad our swine breeders are waking up to discussion of their breeds. The swine business in California has been too quiet for years. If breeders wish to advance their own interests and to improve the hogs of the State, they must do something to attract popular attention—they must enter upon discussions, they must advertise; in short, they must act as though they had something good and wanted people to know it. Messrs. Waite and Gallup are both prominent breeders and they both have good hogs. They are well fitted to introduce more life into our hog interest than it has known for years.—Ed.]

Notes on Resistant Vines.

TO THE EDITOR:—As the time of setting out new vineyards is drawing near, a few remarks on the subject of resistant vines based principally on practical experience may be interesting to the readers of the RURAL PRESS. Whether resistant stock or the non-resistant cuttings of Vinifera varieties shall be set out is a question which, I think, has been definitely settled, or at least should be, by this time, as the dreaded phylloxera in a good many localities is marching onward at an alarming rate.

To sum up a few points in favor of resistant vines which I have deduced from my own experiments with several of the best of them I must say:

1. That vines grafted on resistant stock make a healthier stock than on their own footing, provided the proper stock is planted—that is, stock adapted to the particular soil and climatic conditions.
2. That most varieties of grapes will bear just as well, some even better and only a few that probably do not thrive so well, when grafted on American stock. These latter can easily be ascertained by anybody from our California experimenters.
3. That the vines will come into bearing just as soon, provided the setting out of the resistants is properly done and the right variety selected.

Soil and Climate.—It must always be borne in mind that there is a vast difference of growth and requirements as to soil and climate between the different varieties of the Vitis family. I have experimented with some on a piece of ground which has a shallow surface soil of about one foot depth and a close, compact subsoil, or rather an underlying soft rock of a calcareous and possibly marly nature. Tokay cuttings planted on this poor "soil" made but a dwarfish, sickly growth of a few inches during a

period of several years. Californicas made a perfectly healthy but small growth. Munson's Champini also lacked vigor, while Rupestris St. George has made a better showing; but Vitis Berlandieri has proven itself the best of any of them. It has made a healthy, vigorous growth, as good as could be expected of the best of Vinifera varieties planted in much stronger soils.

While Rupestris St. George will be the resistant stock par excellence, I think, for our dry, loose soils, especially in mountain districts, it must not be unheeded that there are a good many places where other vines will do better. Vitis Solonis will be one of them for soils that are too wet in the spring for Rupestris and too calcareous or too dry near the surface in midsummer for Riparia, but have plenty of moisture at a greater depth, as is the case at the lower part of hillsides in mountains, for the roots of the first named bear down at about an angle of 45° similar to those of Rupestris. While the roots of Alunson's Champini strike down into the subsoil similar to the tap root of a walnut tree (approaching more nearly a vertical direction than the roots of any other vine I know of), I must say that as far as I have observed it lacks vigor even in good soil.

The Riparia.—Although a deep-rooting quality in resistant stock must be considered the most essential for our dry California climate, the much-abused Riparia should not be discarded altogether. With proper soil preparation before planting it is a most valuable stock, especially for somewhat level lands. Any ground contemplated to be planted in Riparia should be subsoiled at least to a depth of about 16 or 18 inches; a depth of 2 feet, as done with a good many vineyards in Europe, would be much preferable. Riparias planted in such a manner, provided that other conditions are favorable, will prove themselves superior to almost any other resistant vines.

As a result of my own observations, I must say that of resistant grafting stocks which have a resistance-coefficient higher than 12 I should use those best adapted to soil and climate (exposure); preference certainly should be given to those with a higher co-efficient, if other things are equal.

Wrights, Cal.

H Hoops.

Weather and Crops.

SUMMARY OF THE REPORT OF THE U. S. WEATHER SERVICE FOR THE WEEK ENDING DECEMBER 28, 1897.

General Summary.

Continued cold, dry weather with injurious frosts has marked this week. The absence of rain and protracted cold are unusual at this time of the year. Owing to the great interests connected with the citrus fruits at this time the usual form of the Bulletin has been changed somewhat, and this number will be devoted chiefly to climatic conditions in orange-growing sections. The following table shows the lowest temperatures so far as known at different points. An average section minimum is also given, showing the general temperatures for a large district:

| |
|--|
| Riverside, minimum, 23°; average section minimum, 27°. |
| San Bernardino, " 21°; " " " " 26°. |
| Redlands, " 23°; " " " " 27°. |
| (Simley Heights), " 31°; " " " " 26°. |
| Pomona, " 21°; " " " " 26°. |

Average section minimum temperatures for other districts were: San Jacinto, 30°; Yucaipa Valley, 16°; Porterville, 27°; Thermalito, 31°; Fresno, 24°; Santa Clara Valley, 24°.

Regarding the damage done, while it is difficult to estimate, there seems to be but little doubt that in some localities it has been only by continued and energetic work with smudges that the oranges were saved. There has been considerable damage done, and there is a general consensus of opinion that smudge fires raised the temperature several degrees and were of the greatest value. There are a number of records where the temperatures were raised from 25° to 28°.

From a careful study of reports, it would seem that while the minimum temperatures recorded during the cold period are not quite so low in most sections as those of 1895, yet its long continuance would seem to make the condition equally severe. The fact that the damage is reported as less than 1895, is probably due to the more extensive efforts at protecting.

It may not be out of place to refer to some experiments made by the Riverside Horticultural Club during the cold spell. Eight plots were laid out. As a result of the work it is announced that henceforth there need be no serious loss of fruit under average conditions, where there is organized preparation on lines now demonstrated to be valuable. In brief, the different types of frost-fighting devices listed were: Burning moist straw; steam apparatus; coal burners and pots of burning oil. The best of these tests gave a gain of five degrees in temperature.

Sacramento Valley.

The dry, cold weather has been beneficial to farmers on above land, giving them ample opportunity to continue plowing and seeding, but in other places plowing has been suspended on account of the ground drying out. In the citrus fruit districts little damage has resulted from the killing frosts, as the fruit has been in large measure picked. Rain is badly needed for growing grain. Orchardists pruning.

San Joaquin Valley.

Cold and dry, with heavy frosts. Farmers waiting for rain. Plowing has been suspended in some places owing to lack of rain. In the citrus fruit regions, while severe weather has been experienced, the damage has been slight, owing to the fact that much of the fruit had been picked. The cold will probably kill parasitic life and retard the blossoming of fruit trees. Heavy frosts make hard ground and delay plowing.

Coast and Bay Sections.

Continued cold weather, with heavy frosts. Ground is still in a condition for plowing, but a good rain would be of great benefit. Farmers plowing, seeding and pruning. Weather hard on stock and feed. Large acreage of grain.

Southern California.

LOS ANGELES (Bassett).—Cool and dry. Some grain being put in. About half of wheat and barley seeded. (Duarte).—No damage to oranges or other citrus fruit. (Palmdale).—Olives and figs entirely ruined for next year's crop. (Pomona).—Some damage to fruit. (Los Angeles).—Some damage to oranges. Rain needed. Cabbage and celery doing nicely. (San Fernando).—No damage to fruit yet.

VENTURA.—No damage by frost to oranges and lemons.

SAN BERNARDINO.—Some damage to citrus fruit. Rain needed.

ORANGE.—Heavy frost did considerable damage to celery. Oranges and lemons not affected.

SANTA BARBARA (Santa Barbara).—Continued cold nights, slightly moderating at end of week. (Surf).—Cold, but no damage. Some grass sown. Rain needed soon.

RIVERSIDE.—Warm, dry northerly. Frost did slight damage to citrus fruit in low and exposed localities, but percentage is not great. Oranges well colored and sweet.

SAN DIEGO (Otay).—The week has been cold; temperature as low as 25°. No damage except in exceptionally cold spots. Nearly half an inch of rain on 18th. (San Diego).—Lowest temperature 36°, on 22d. Light frost on 19th and 25th, but no damage resulted. Reports from citrus fruit region show that all groves adjacent to bay and ocean and those on mesas suffered no damage. Where advantage was taken of Weather Bureau warnings and smudging resorted to the loss is small.

AGRICULTURAL REVIEW.

CALIFORNIA.

Butte.

ORANGE EXPERIENCE IN OROVILLE.—Ooe gentleman who owns a lot 132 feet square, upon which are two or three buildings, will this year realize \$100 from the trees grown on his lot. Another man got 28 boxes from two or three trees. The writer, from a lot less than the one first named has picked so far this year over 80 boxes, and has 20 or more left on the trees. Instances of this kind might be multiplied many times here in Oroville.—Oroville Register.

THE GRIDLEY CANNERY.—Col. H. Bendel, of the firm of Tilman & Bendel, of San Francisco, was in Gridley on Tuesday. Mr. Bendel, besides being a member of the above-mentioned firm, is interested in the Marysville cannery, and a heavy stockholder in the San Jose Fruit Packing Company. Negotiations have been pending for some time for the purchase of the Gridley cannery by the San Jose company. A suit to quiet title is now in process of settlement in the Superior Court of this county. Should the San Jose company fail to buy the cannery here, it is likely that Mr. Bendel will purchase it as an independent investment. The matter is not yet positively settled, and nothing definite can be said before the first of the year.—Gridley Herald.

Fresno.

AN AGRICULTURAL FAIR.—The pronounced success of the poultry show has awakened new interest in a county agricultural fair—not a gambling layout with a fair attached to shield and excuse a carnival of crime, but an old-fashioned county fair, at which may be exhibited the best of all the products of the county. The producers themselves have now become interested in the movement. The recent farmers' institute, with its basket lunch feature, and now the poultry show, have created a desire for a real Eastern fair of the products of the soil. There will be races, of course, but even these ought to be secondary to the main object, and the whole affair should be as nearly as family-like as possible. The exhibit would, of course, be made in town. The idea is in a formative state, but it has taken firm root and will undoubtedly be carried out. To discuss the matter and perhaps to appoint appropriate committees for the further consideration of the subject a meeting will be held at the City Hall, Fresno, on Saturday, Jan. 8th. It is hoped that there may be a large attendance of actual producers at this meeting, and that a full and fair expression of opinion may be had. The idea of erecting a permanent pavilion in the city will, in our judgment, meet with general favor and encouragement. And a fair held in town can be made a success, just as big a success as the poultry show has been.—Fresno Expositor.

Los Angeles.

THE ORANGE CROP SAFE.—The *Pomona Progress* gives the following as a result of its investigations as to the effects upon the orange crop of the recent cold weather: "THE PROGRESS has taken pains to get the best opinions on the subject obtainable in this valley; and they are to the effect that no damage worth mentioning has been done to the citrus crops in this locality, the general consensus of opinion being that the injury, if any, is limited to only a few of the most exposed oranges on trees in the coldest localities, and hence is of little consequence. Sunday night was the coldest and the weather has been gradually moderating since. As from 95 to 98 per cent of the orange groves lie north of the Southern Pacific railroad, we sought information from that locality. J. A. Packard of Lordsburg, F. L. Palmer, manager of the Seth Richards grove at North Pomona, George Couch, D. L. Davenport and Alexander Moncrieff, living between Pomona and Claremont, say that they have investigated and have been unable to find any frozen oranges in their localities. Mr. Couch has been in the orange business in Florida for twenty-five years, through all kinds of weather, and says he thinks he knows a frozen orange when he sees it, and he is positive that no damage was done to his fruit. Cyrus Burdick, one of the oldest settlers in Pomona, says there has been more scare than hurt and that no damage worth mentioning has been done. H. L. Armstrong, W. H. Shureman, J. E. Packard and C. F. Loop think there may be some damage, but very little. J. R. Moles of the Pomona Fruit Exchange, and G. N. Brink of the Claremont Fruit Exchange, went all over the valley and say they can find no damage worth speaking of. All concur that the Pomona orange crop is safe."

ABOUT ORCHARD FUMIGATION.—The season for fumigating orange and lemon groves for scale parasites is almost at a close. The scale envelops itself with a hard, tenacious shell in midwinter and spring, and the gases that kill the scale in the summer and fall months, has no effect when the scale is in this condition. There has been more general fumigation in citrus fruit groves in the past six months than in any other period in the history of fruit growing in southern California. Dr. J. H. Dunn of Pomona, has kept several gangs of workmen busy every night with tents and chemicals, since last July. They have been all over Los Angeles and San Bernardino counties. A great many people still have novel ideas of what work and expense is involved in gassing or fumigating a grove of trees. Everyone knows, however, that the work must be done at night in order to kill the scale, and at the same time, not to kill the trees by burning. It costs from five to seventy-five cents a tree to fumigate orchards well. It all depends on how large the trees are, and how fast the work may be done and the quantity of chemicals used. The components of hydrocyanic acid gas used in gassing the trees are sulphuric acid and cyanide of potassium. The former costs at wholesale about twelve cents a gallon, and the cyanide of potassium is strictly five cents a pound. A gang of five men will use about forty gallons of sulphuric acid and fifty pounds of cyanide of potassium in a single night's work. This last season Dr. Dunn has bought as much as \$1000 worth of chemicals every week. There is also the constant eating away of the canvas of the tents over the trees and, besides, the wages of the men. A gang of five gassers will fumigate an acre of large trees in a night. It takes forty minutes to apply the hydrocyanic acid gas thoroughly to a tree. Care must be constantly exercised that not a hit or a whiff of the deadly gas is inhaled by the workmen. Occasionally one does get a breath of the gas and it makes a man sick for a few hours. A half a dozen breaths of the poisonous gas will kill anyone in less than half a minute. Hydrocyanic acid gas is the most deadly known.—Pomona Beacon.

DISTRIBUTION OF THE ORANGE CROP.—Probably to date close to 1500 carloads of oranges have been sent East. Although far from being at the stage of perfection the fruit is better in all respects than is usually the case at this early date. It is handsomely colored, and a good deal of it is pretty sweet. The crop will run away beyond all former records in volume, but the way it is being handled gives reason to hope that it will all be successfully marketed. In the freight offices of the railroads the clerks are often heard to exclaim, "Well, there is the name of a place I never heard of before!" and he goes to his maps to see where it is. This means that shipments are being scattered over a much larger area than heretofore has been the rule. All the shipments are not being made to two or three great centers to be reshipped or glut the market. This year shippers are reaching out for new territory and are shipping directly. That is the proper way to market the crop. The population of the United States is close to 75,000,000. If our crop is 12,000 cars of oranges, or 4,000,000 boxes, it is only one box for about twenty people. This country consumes 70,-

000,000 barrels of apples, or nearly one barrel per capita, when the fruit sells at \$1.50 to \$2.00 per barrel. This year the apple crop is 38,000,000 barrels, or more than nine times as many barrels of that fruit as we have boxes of oranges. The jobbing price of apples is \$4.50 in New York. Yet all the crop will find ready buyers. The orange crop can all be marketed at paying prices if it is properly distributed.—Los Angeles Express.

Monterey.

THE SALINAS SUGAR FACTORY.—Claus Spreckels' great sugar factory and refinery is rapidly assuming shape and its hundreds of workmen are busy as bees pushing the great work to completion. Thirty dwellings for the heads of departments are also under contract to be erected near the factory, besides a big hotel of modern design and equipment. Forty neat and comfortable tenement houses with barns and other outbuildings are to be erected on Mr. Spreckels' land, one on each seventy acres. Those of the buildings already completed present an attractive and home-like appearance.—Salinas Index.

Orange.

MYSTERIOUS CATTLE DISEASE.—No inconsiderable controversy exists among cattlemen regarding the nature of the disease that has caused the death of many Orange county cattle during the past year. The disease resembles murrain, but microscopical examination of the blood and spleen of affected animals has failed to show anthrax bacilli, which would be present in murrain. Whatever the disease, it causes death in nine cases out of ten. Dr. Vans Agnew of Santa Ana, who has treated many of these cases, states that in a number of post mortems, in but one case has he found the lungs of the animal affected. This was a cow that died near Bolsa. Dr. Vans Agnew says that it was not anthrax, but tuberculosis, and a very pronounced case, nearly one-third of the lungs being destroyed. While the former disease has not assumed the extent of a year ago, it is still serious enough to merit the closest observation from stock owners. One of the heaviest losers by this disease is Wm. Lamh of New Hope district, who last spring watched his cattle die by the dozen without being able to check the malady. He lost 150 head, and several other stockmen in this neighborhood have experienced heavy losses. The damp, hoggy districts in the swamp seem to be most favorable to the propagation of the disease.—Anaheim Gazette.

THE FROST IN ORANGE COUNTY.—A report became current to-day that many of the orange orchards in Tustin had been nipped by the frosts of the last two or three nights and that a large part of the crop would be a loss. This report is found to be untrue, however, and the real condition greatly exaggerated. There was a slight injury to some of the less hardy oranges on the low lands, but only a small part of the crop has been at all affected. H. K. Snow this morning informed a *Blade* representative that the temperature had not been low enough to work any serious injury, because the frost does not come until very early in the morning and so remains too short a time to freeze the fruit. If it fell at night the chances are that many of the oranges would suffer. As it is, the cold wave coming down the valley reaches this section between 5 and 7 o'clock in the morning—too late to do much damage. Mr. Snow said that he had found a few small lemons of late growth which showed signs of frost, but that the rest of the oranges and lemons had not been affected. His statement of the condition of the oranges here was given weight by the fact that a Los Angeles shipper who had contracted for the fruit from a number of Tustin orchards was down yesterday, and, after examining the fruit, said that it was all right and had not been damaged. D. H. Thomas reports a light touch of frost in his orchard, but very little fruit damaged. The Naveis have escaped entirely, but the Mediterranean Sweets, especially those near the border, show signs of having been slightly nipped.—Santa Ana Blade, Dec. 23rd.

Riverside.

EXPERIMENTS IN ORANGE TEMPERATURES.—Experiments are being made at the experiment station near Chino to ascertain how low a temperature the orange will stand without injury. In Los Angeles a few days since an orange was subjected to a temperature of 26° for six hours. The orange was then cut open and the thermometer thrust into the pulp; the reading was 31°, only 1° below freezing point, and the fruit showed no signs of injury. A series of experiments along this line, conducted in a scientific manner, would result in the accumulation of data of much interest.—Riverside Press.

San Benito.

MOSS LANDING TO HOLLISTER.—The Pajaro Valley railroad system is to be greatly extended during the coming year. The landed possessions of Claus Spreckels have become so great in Monterey county that the harvest of beets therefrom has overtaken the freight capacity of the little road. This railroad system should be extended to the San Juan valley, and on to Hollister. The normal yield of beets in the San Juan valley alone is 30,000 tons, and in the years to come it will be greater. The completion of this road to Hollister would bring us within twenty-six miles of a small seaport, and would result in a vast saving of freight rates. This extension can be secured if the proper efforts are made, and now is the time to move, while the spirit of improvement is on our people. The present Board of Trustees has shown commendable public spirit, and where they have led citizens generally have been eager to follow. We now suggest that the Board call a public meeting to start the ball rolling for the extension of the Pajaro Valley road to Hollister.—San Benito Advance.

San Bernardino.

ORANGE MATTERS.—The Redlands Citrus Union has reduced the price of fancy Naveis to \$2.25 per box, but advise growers to hold their fruit for a better price, which is expected after the holidays. Several cars, Naveis and Seedlings, were shipped last week. Complaints having been made that oranges from other sections are being shipped in boxes marked Redlands, the Union adopted the following resolution: *Resolved*, That all packers and shippers doing business in Redlands shall use a special brand for Redlands and Highlands, and that their box labels shall contain in plain letters the words "Redlands," or "Highland."—Redlands letter.

FARMERS' INSTITUTES.—The farmers' institutes being held from time to time throughout California under the auspices of the University of California are doing a good work for the agricultural and horticultural interests of California, and in a way that nothing else can do it. They supplement the work of the college education in the University, and the agricultural and horticultural publication in the home. It is a form of "University extension" work that is just now very popular, and very rapidly becoming more so. To one who has never attended a farmers' institute they may seem stale and unprofitable, a place where men with theories and wheels in their heads congregate and "spout." But to one who has been present, and become so interested as to participate in the exercises, they are quite a different thing. They are intensely practical, and one with theories and no scientific or practical ground upon which to erect them is soon called down, and he of the wheels finds no congenial atmosphere in which to make them "go round." In other words, the institute is a council of earnest men and women assembled to discuss the problems of every-day farm life with the view of promoting agricultural and horticultural interests; of learning when labor can be saved or applied most effectively; the burdens of life lightened indoors as well as outdoors, and life on the farm made more attractive and its participants better citizens.

These things are accomplished through the relating of experiences and the discussion of methods, etc.—Riverside Record.

San Joaquin.

THE PRICE OF WHEAT.—The following remarks by Capt. J. W. Smith, the veteran grain dealer, are taken from an interview in the *Stockton Mail*: "You remember you were in here one day and I told you that the name of wheat in California was Dennis this year. You wrote it down on the wall, with the date. There it is now, just as you wrote it: 'Dennis for wheat; Smith; November 11.' As I have said all along, the reason for it is the immense export crop in Oregon. It is the highest crop they ever had there, and, being free sellers, they have hid high for ships and the ships have gone where they could get the best freights, naturally enough. They have hid as high as 43s 6d. This has made a scarcity of ships in California harbors. If there were any way of reducing freights now wheat would go up. The demand is there, and we have the wheat. It has been said that the Dingley bill has had something to do with it; that, there being less importing, ships have had to come over here with ballast, and, there being nothing to be made by ship owners on ballast, the ship owners have raised freights to pull out even, and that the shipper has had to pay a freight rate which amounts to paying freight both ways. That is not the prime cause; that may make a slight difference, but only slight, for very few ships come in ballast. Those which have no merchandise cargoes bring coal, on which at least they lose nothing. However, the Dingley bill is of no benefit to the California wheat raiser. As I said, the prime cause of the low price is the enormous Oregon crop. Washington also has a large crop of wheat this year. You see, in the early part of the season grain men up that way made heavy purchases, and have had to pay high freight rates to get ships to market their grain. Other dealers claim that while this condition is a fact, that it cannot last much longer; and that wheat will surely advance and freights decline. They contend that the world's shortage of wheat is such that when other sources of supply are exhausted those who want wheat will be compelled to come to California, and then our price must be their price."

Santa Clara.

MARKET MUST BE EXTENDED.—The yield of California deciduous fruits is increasing from year to year, and if prices are to be maintained or bettered the market must be correspondingly extended. It can be done, both at home and abroad, but it will not do it itself. The plan to raise \$10,000 for the purpose of exhibiting our fruits in Germany and other European countries is so certain to produce satisfactory results, if carried out, that the lack of interest in it displayed by many of the growers is incomprehensible.—San Jose Mercury.

Santa Cruz.

PAJARO VALLEY POTATO NOTES.—From 50 to 60 cents per 100 pounds is the local buying price for spuds. This is a shade lower than prices were last year, and yet there is a greater shortage of potatoes this year all over the world. * * * It is estimated that the potato crop of this valley will run close up to 70,000 bags—about 160,000 bushels, or 4000 tons. The yield will not be as heavy as it was last year, but is turning out better than was estimated earlier in the season.—Pajaronian.

PAJARO VALLEY APPLE NOTES.—Up to date 212 cars of apples have been shipped Eastward. * * * Orchardists and packers are jointly interested in solving the question of what shall be done with cull and waste apples. There is a quantity of small fruit each year which might be put to some better use than being sent to market to compete with and cut the price of better grade apples. Then there is a percentage of the apples lost in each packing house owing to rot. With the rapidly increasing apple production of this valley, it is becoming necessary to find some method of utilizing the so-called "waste" part of the apple crop. Part of the culls can be dried or made into jelly stock, and other parts of the "waste" might be converted into vinegar without loss.—Pajaronian.

Solano.

BEETS WANTED FROM SOLANO FARMERS.—The managers of the new sugar factory at Crockett, Contra Costa county, have made an offer to Solano farmers as follows: The company will furnish seed at low rates, and will sell or rent on reasonable and easy terms, drills, cultivators and other appliances that may be needed for putting in, cultivating and harvesting the crop. During the season of planting, growing and harvesting an expert will visit all those with whom the company has contracts to furnish information and suggestions which will aid the farmer to realize the best results for his labor. The following are the terms and are decidedly fair and equitable: For beets testing 15 per cent of sugar, \$4 per ton net; and for every full degree above 15 per cent, 25 cents per ton additional; that is, for—

| | |
|------------------------|-----------------|
| 16 per cent sugar..... | \$4.25 per ton. |
| 17 " " | 4.50 " |
| 18 " " | 4.75 " |
| 19 " " | 5.00 " |

And for every full degree below 15 per cent, 25 cents per ton less; that is, for—

| | |
|------------------------|-----------------|
| 14 per cent sugar..... | \$3.75 per ton. |
| 13 " " | 3.50 " |
| 12 " " | 3.25 " |

Beets testing less than 10 per cent will not be received. These prices are net for beets delivered at the nearest railroad station or boat landing, the company paying the freight to the factory. Payments will be made the 15th of each month for all beets delivered the previous month. Hilborn Bros. will contract for quite a number of acres on their lands; A. A. Dickie has already planted beets on a small plot of land on the Morris tract west of Suisun.

Sonoma.

A FARMER WHO FARMS.—Geo. Engler has purchased a gasoline engine which he will use for pumping water out of Sonoma creek for irrigation and other purposes, says the *Index-Tribune*. His farm, which is located in the western suburbs of town, is one of the best tilled in this valley, and by utilizing for irrigation purposes the water from Sonoma creek, which is the western houndry line of his place, he expects to bring it up to the highest state of perfection. He believes in diversified farming. His wine cellar contains many thousand gallons of Sonoma valley's choicest vintages; his granary is filled to overflowing with barley and corn; he cures his own hams and bacon, makes his own butter and cheese, and what with his vegetables, chickens, eggs, ducks and geese, he and his family live off the fat of the land. It is true he does not drive around the valley holding the reins on a pair of prancing steeds, but for all that he has a bank account, and no mortgage on his farm. He is a farmer who farms.—Healdsburg Enterprise.

Tulare.

PORTERVILLE ORANGE SEASON.—The orange season is over, and it has been a very propitious one for Porterville. Without counting individual shippers, 28,574 boxes of Navel and Seedling oranges, or 84 cars have left the Porterville depot for points all over the United States. Of this quantity, George T. Frost, who closed down his packing house Tuesday, has shipped 22,154 boxes, or 65 cars, and the Porterville Fruit Exchange 6420 boxes, or 19 cars. The prices averaged by Mr. Frost for the fruit up to December 7th, was \$2.75 per box for Naveis, and \$1.75 for Seedlings, and after that date \$2.15 and \$1.50 respectively. The Porterville Fruit Exchange has averaged \$2 per box, including seedlings, all through.—Enterprise.

METEOROLOGICAL.

Discussions on the Weather.

NUMBER 11.

Written for the RURAL PRESS by L. E. BLOCHMAN.

Storm Areas.—In this article we shall consider mainly storm areas, occasionally referred to in the last discussion.

Our whole coast is bathed in that temperate Japan current from across the Pacific. In the course of this Japan current great storm areas arise and are carried along easterly in its course, striking the land in summer along the southern Alaska and the British Columbia coasts. As winter approaches, and also later on in the spring months, these storm areas strike in much farther south, usually from Vancouver to Oregon. This accounts for the absence of summer rains, even in Oregon, and accounts for the prevalence of winter and spring rains when these storm areas have centered southward.

Yet how does the California coast get its rain? A few storm areas strike in directly along the northern California coast, occasionally along the central California, and still much more rarely along the southern coast. This would afford us but little rain here were it not that we received it by deflection from the larger and more intense storm areas that strike in north. It will be necessary to discuss the nature of these rain-bearing storm tracts before we can understand why they are occasionally deflected from their usual eastward trend.

These storm or cyclonic areas (as they are more technically called) are great whirls of moist, rarefied atmosphere, varying in diameter from about 100 miles to fully 1000 miles. This whirl of moist air gyrates around a storm center, and the whole storm area moves usually eastward, though subject to deflecting conditions. These storm areas are called cyclonic, for they resemble a cyclone on a large scale in a gyrating movement towards a well-defined center of low pressure. However, on account of the far larger area, the storm center has not the intensity and therefore is without the danger of the close confining whirl of the real cyclone. Wind and clouds flow in toward the storm center in every direction. If, for instance, a storm area is approaching the Oregon coast, and the storm's center is due west of Oregon, the wind and clouds will come from the East, suctioned toward the area of lowest pressure; in Washington the winds will be northeast; in California, south by southeast; and then, as the storm passes, the wind everywhere shifts accordingly.

The Trend of Storm Areas.—Now, the direction that these storm areas will take depends on the condition of the atmosphere that surrounds them. Their usual course, as we have said, is eastward; but if too high a barometer forms directly eastward—that is to say, if a very dry or a very cold atmosphere prevails over the plateau region—the storm is resisted in its easterly course and will be deflected southward or northward, depending on where the lower pressure is (in winter usually southward). It will thus trend down the coast and then go eastward across northern or central California, giving these upper portions of California more or less rain. If the storm is still obstructed, the rains will be deflected into southern California and the storm area will find its way eastward lower down. Locations nearest the usual course of the storm area receive the most rain; those nearest its deflected influence and the occasional storm tracks, as in northern California, still receive considerable rain. But the farther down the coast the less the rainfall. As the storm travels inland it rapidly loses its moisture, and therefore eastern Oregon or Washington, though in the path of the usual storm areas, receive far less rain than in the latitude of San Francisco, which gets most of its rainfall by deflection. East of the central and southern Sierras the rainfall becomes so light as to be almost rainless. Sometimes, but more particularly so in wetter seasons of California, some storm areas become hemmed in over the State and precipitate very heavily.

Differences in Intensities of Storm Areas and in Deflecting Tendencies.—There is a great difference in the intensity of the different storms, and consequently in the amount of precipitation following in their wake. There seems, also, a marked difference in the trend of the storms south, which occasions such contrasts of rainy seasons in central and southern California—such contrasts as are never known in the East or on the northern coast. In the rainy season of '76-'77 only about 4 inches of rain fell in Santa Barbara, to be followed in the following year of '77-'78 by 29 inches. Occasionally storm areas are divided at sea, or even after striking the land. A part of the storm may pass eastward and a part be reflected back onto the ocean, and then strike in again at some point farther north or away south, thus leaving a gap between the two rainy sections. These are the rainstorms that seem to come upon us so suddenly. Occasionally the storm area passes inland and a part of it is deflected down the whole length of the Sierra Nevadas.

This condition existed on Saturday, Dec. 18th, when the cold spell prevailed. It snowed then very heavily over the Sierras, and rained but lightly elsewhere. High barometers existed to the northward and a relative low in southern Cal-

ifornia. These are the exact conditions for our cold snaps, sometimes rainy, though more often rainless. The cold air of the British Columbia Rockies sweeps down from the north and chills exposed locations of southern California equally if not more than central California. Nevada had temperatures near the zero point; Havre, in Montana, recorded -24° , Riverside between $+20^{\circ}$ and $+25^{\circ}$.

Storm areas, as we have said, are of very different intensities. This is told by the depression of the barometer and also by its area. If it affects a large number of barometrical stations up and down the coast almost simultaneously, and with some degree of depression, it is of great area, and will give copious rains over a great part of the coast. The amount of precipitation depending on the resistant atmosphere east and also the amount of moisture in the atmosphere.

The indications of the approach of such a storm is shown by isobars* parallel to the coast, with higher parallels inland and lower nearer the ocean, towards the approaching storm center.

A very heavy rainy period is not usually produced by one storm area, but by a series of such storm areas, following each other at intervals. A single storm does not seem to last more than a few hours, a day at most.

Every storm area that approaches the coast is now observed and tabulated by the signal service.

Storms north of Vancouver are only observable when they impinge themselves to the northward of Montana or Dakota. Such storms seldom affect us. Washington and sometimes Oregon may receive a light rain during its passage; and this accounts for their occasional light summer rains. [They also pass over though less frequently in winter].

Of storms that first strike our own coast, those of the greatest intensity usually strike in between the south end of Vancouver and the northwest coast of Washington.

Storms that strike in opposite of Oregon or northern California, even if of considerable energy, are far less liable to give rains to central and southern California (by deflection) than those coming off Vancouver. It seems, therefore, when they strike the more northern coast they have more intensity and area, and when deflected down the coast they will yield the greater precipitation. Such at least is my observation of them.

When the isobars are parallel and declining, rain is almost certain for the greater part of this State; and still if a very low barometer appears off the northwestern coast of Washington and the barometers in Oregon and California are declining, heavy rains are equally certain. The infrequency of strong easterly winds before our storm shows how seldom storm areas strike in opposite the middle and lower coasts of California. A strong south or southeast wind may sometimes not bring rain to some locality, for a location may be within the suctional area of the storm center and still not be within the rain-bearing area, especially if the storm has a more rapid easterly movement.

Contracted Storm Areas.—Sometimes (though not often) heavy storms will strike in south of the usual course which yield very heavy precipitations. The storm area is not at all a large one, nor is its real intensity so great. But high barometers may form on all sides of the storm, narrowing it down, and, thus contracted, it must part with all its moisture over a limited area and yield an intensive precipitation. A striking illustration of such a storm was afforded us in this State in January, '94. While this season was quite droughty in the southern part of the State, more or less heavy local rains relieved central California. A storm center of limited area seemed to strike in directly off Sonoma county in January, '94. It was not felt above Eureka nor much below San Francisco. This small storm area, in a rain of three to four days, gave to a narrow strip in Sonoma and Marin counties 10 inches of rain, causing destructive floods and a serious railroad accident, which may yet be remembered.

The average rate of traveling of the storm center—the low of the storm area—is only about 600 miles in twenty-four hours, but in this instance it might have been retarded to less than one-tenth. Whether also this was one storm area or more than one there is no recorded data for this section.

Theories and Observations Regarding Dry Weather.—Of all the sciences, climatology (the study of the weather) has received the least attention; and our Pacific coast weather, with idiosyncracies of its own, has hardly been touched upon, excepting in mere short-range forecasts. To instance the value of observations, a comparison of this year's November and December weather would have helped to prognosticate the existing drought in the southern part of the State. The atmosphere has been relatively drier than the same months of other years, a persistent high pressure exists below San Francisco, which causes a prevalence of northerly winds, and prevents any storm areas from moving southward. Thus left to itself, the Arizona and Colorado desert atmosphere has evidently impinged itself westward. It did the same thing two years ago. From the latter part of November until the 16th of January no rain fell south, except very slight showers from off the west—just like this year—the tag ends only of heavy northern storms drifting south of the main area. I only refer to conditions down the coast. De-

*Isobars are equal or parallel lines of barometrical pressure, just like isotherms, are equal lines of temperature.

members of '82, '86 and '91 acted also similarly. The same dry conditions existed in the atmosphere, with drifting clouds coming from the north, or else a hazy cloudiness during the passage of northern storm areas occasioned hard freezes, with a general inertia of the atmosphere. But yet withal comes the question of that possible change of phase which may be looked for after a long interval of drought, which has taken place in every recent season except '76-'77.

What concomitant conditions existed in '76-'77? I had made no records then. Living in the city, I recollect these facts: The same inertia existed in the atmosphere, but lasting longer and being more persistent, then absolutely no rain from the latter part of October till about the middle of January; every day, one like the other, clear and cloudless; no storm areas were deflected anywhere near the central part of the State, though heavy rains occurred in Portland; however, warmer night temperatures prevailed than at present. A decided cold snap in January finally broke the drought, in part only; for after being followed by some precipitation, still insufficient fell for grass and crops. But the summer weather: The preceding June, July, August and September months differed from any others by having less fogs than usual and with the coast winds also much lighter than normal. This lull in the movement of the atmosphere differentiated the latter half of '76 from every other season.

A long dry spell does not at all imply a dry year. It simply implies that the storm areas have not been deflected southward as early as usual, on account of the resistant atmosphere south. Conditions have yet to be studied to determine the probability of their southward movement later in the season, and until then no one has any right to predict a dry season. Seasons like these usually yield less than an average rainfall, but on the other hand the rain comes later in the spring.

It is a question whether the inertia in the atmosphere is caused by the dry desert air impinging itself westward, or whether the intensity of the Japan current is less and cannot force it back, and finally whether there is not that prevalence of summer highs still over the middle Pacific, which may have a secondary influence and produce those persistent high barometers between San Francisco and Point Conception.

The data for all these investigations is yet too meager to be more than tentative, and very few scientists have any predilections for climatological investigations.

To accomplish anything in such a tentative science, it requires continuous observations for a long series of years and the comparison of a great number of factors with their varying conditions.

Santa Maria, Santa Barbara Co., Dec. 23, 1897.

Asparagus Rust.

TO THE EDITOR:—At the close of the second season of the asparagus rust in New Jersey the question of its range again arises. In 1896 it seemed to be limited to New England, Long Island, New Jersey, Delaware and Maryland, so far as actual records were made. During 1897 the disease has been worse than last year, and the area infested has extended to include the large asparagus fields of South Carolina. It seems important to get as full information upon this rust fungus (*Puccinia Asparagi*, D. C.) as is convenient, and therefore it is desired to learn whether it has been noted in your vicinity, and if you had it in 1896, whether it was worse this past year? Extensive spraying experiments have been carried on during the past season, with the result that the rustiness of the treated plants was reduced about 25 per cent over those that were not sprayed. While this is not as hopeful as one might wish, it is a clear demonstration that rust fungi are amenable to treatment, even upon such difficult subjects as asparagus plants, with their smooth epidermis and wire-like "brush." Any information you may favor me with upon the asparagus rust will be gladly and thankfully received.

BYRON D. HALSTEAD.

New Brunswick, N. J.

[We have informed Prof. Halstead that the disease either does not occur in this State, or at least has never become of any horticultural importance. If this is not true we should like to know of it at once. The disease is seen after the plant has been allowed to make top-growth, and appears first as small reddish-yellow points on the main stem, branches and leaves—extending into patches and streaks of reddish-orange and finally becomes dark colored. It resembles the rust of the wheat plant. If California asparagus growers have seen it we shall be glad to hear from them, for treatment will then be described in the RURAL.—Ed.]

A House-Breaking Bird.

TO THE EDITOR:—A woodpecker pecks holes in my house. As it is hard to shoot him, is there any other way to kill him (by poison, for instance)?

Toluca.

A. HEINSINS

[Who can prescribe for this marauder?—Ed.]

FRUIT MARKETING.

Foreign Markets for California Products.

By J. A. FILCHER, Manager of the State Board of Trade, at the Fruit Growers' Convention at Sacramento.

Our efforts thus far in California have been largely devoted to considering what to plant, how to plant, how to cultivate, to irrigate, to fumigate, to prune, to pick, to cure and to pack. These points we have mastered fairly well; but when we have grown and cured and packed our fruit, we have not always been able to dispose of it at a price that would insure a profit to the producer. It is, therefore, important that we should give some consideration to the question of extending our markets, and, incidentally, increasing the demand for our products.

Opportunity for Foreign Observation.—Though it fell to my lot to spend a short season abroad in a position that put me in contact with the dealers in such products as we grow for export, yet I realize that there is much of interest bearing on the subject of "foreign markets" which I did not learn. I did, however, glean some facts bearing on this important question which I deem of interest to our people, and it affords me pleasure to have the opportunity to give them to the producers of California for what they are worth. As you are aware, I had charge, for a time, of the exhibit which this State was pleased to send to the Horticultural Exposition at Hamburg, Germany, this last summer. It is in regard to the conditions in Germany, and the facts and impressions gained by me while in charge of the exhibit at Hamburg, and the effects which that exhibit had as an agency in increasing interest abroad in our State and stimulating the demand in Europe for our products, that I shall assume to speak.

The Exhibit at Hamburg.—We had a good exhibit in Hamburg, consisting of a full line of all varieties of dried fruits, canned fruits, conserved fruits, raisins, nuts, wines, oils, honey, cereals, etc., etc., with some samples of our woods; and plenty of pictures of California products and views of California scenery to embellish the display. Whether it was the superior character of our exhibit, or the interest that attached to it because it came from a distant land, I will not pretend to say, but certain it is that to the thousands who attended that Exposition it was constantly the center of attraction. When we consider, however, that California was awarded the Gold Medal for the best industrial exhibit, we may be pardoned for believing that part of its attraction was due to the intrinsic merit of the products displayed. All admired it, and all praised it, and those who were dealing in such products as we displayed, whether from Hamburg or elsewhere in Europe, would linger and inspect and refuse to leave until the attendants in charge could find time to answer at least some of the many questions which they propounded of a character going to show the lively interest that the display had awakened in them, not only in regard to the products exhibited, but in the State where they were grown and cured. California's fruit made an impression on the hundreds of thousands of visitors to that fair which will not soon be effaced, and which will serve them as a subject to talk about for many years to come.

Interest in Cooked Fruit.—In connection with our stand for literature, from which we distributed gratuitously the pamphlets we were able to print, and such as we were able to secure, bearing on California and its resources, we put in an electric stove and daily cooked and gave away liberal quantities of dried fruit. The fruit was prepared and cooked according to the most approved California methods, and though the Germans as a people are good cooks, and especially good fruit cooks, they in most cases frankly admitted the superiority of the fruit as we prepared it, and accepted with eagerness and appreciation the fruit cooking recipes we handed them with each sample of the cooked fruit. The same interest in our cooking-stand and methods of preparing dried fruit for the table was manifested by the people across the water that has been shown by the people of our own country wherever we have put this work before them, and there, as here, a sample taste and a recipe was generally followed by a purchase and an experimental effort to cook the fruit as the little recipe book directed. I was told by a gentleman who is in the California fruit trade that the retailers, who yet had some of our dried fruit on hand, raised the price on it ten pfennings (2½ cents) per pound soon after we started our cooking booth, by reason of the extra demand.

German Traders Interested.—But it is not alone because the visitors to the Exposition praised and admired California's exhibit, not because they liked our cooked fruits, not because they read with avidity our literature that the work in Hamburg was a success, but more particularly because it excited the interest of the importers and the jobbers, the men who are concerned commercially in pushing and extending the market for our products. Hamburg is one of the greatest commercial ports of the world, the greatest of the European continent. It collects and ships products from all Europe, and to all parts of

Europe it distributes the goods that find a landing there from all quarters of the globe. In 1895, the latest year for which we have the official returns, its combined import and export trade reached the enormous value of \$1,650,951,414, a decided increase over the preceding year. At such a trade center there is necessarily a great deal of capital invested in the export and import business. The men handling this capital are by no means novices in their line. As they know the supplies of the earth, so do they know the market of Europe and its demands. These men saw the California exhibit at Hamburg, and almost every one of them interviewed on the subject predicted a great and growing demand for California products, particularly our dried fruit in Europe. Their confidence in this regard was manifested by their eagerness to get into the trade. It was no trouble to find there good and strong and active firms with established connections throughout Europe not only willing but anxious to take the agency for any good California exporter. Since the season opened this spring several new agencies for California have been established there, and still I have the names of at least a dozen good and responsible Hamburg houses who want to get into business with us; who want to represent some firm or association in California who will ship on their order such products of this State as they feel confident they can dispose of. The demand for California agencies in Hamburg seems to be greater than the trade can supply.

What Californians Still Have to Do.—While in my mind there is no doubt but the display made by California in Hamburg will result in greatly stimulating the demand in Germany for such of our products as form the most conspicuous part of the exhibit, which I will designate more particularly further on; and while I believe a little additional missionary effort would spread this demand throughout northern and central Europe, yet I am convinced from my observations of the situation here and abroad that there is a work yet to be done on the part of Californians before they can reap the full benefit of the market which Europe affords. In dealing with the Europeans we must be honest; we must so sort, pack and brand our goods that there can be no possible room for deception. They must have full measure, an honest pack and goods that are chemically pure and true to sample. Any Californian who would impose on the European market a single box of goods that does not fill these conditions is an enemy to his State. With this rule of honesty established, the growers should band together in demanding such price for their products as will insure them a fair remuneration. A market is of no value unless it is a profitable one. If the grower, in face of the spreading demand for our fruit products at home and abroad, sells his prunes, or his peaches, or his apricots, or his plums, or his pears, or his raisins for less than a profit, it is because he is not organized to take advantage of the situation. I am convinced that Europe at least will take practically as much of his goods at a price that will insure him a profit as it will at a less figure. Of course, a very low price might induce extra consumption, as a very high price would restrict it; but what I am aiming to impress is that there is a reasonable medium within the lines of modest profit that can be maintained without materially affecting the demand. My observations in Hamburg impressed me with this fact. The first quotations received there for this season's California dried fruit were very low and the buying, of course, was brisk. After a time all quotations from this State were recalled and for a week or more no California fruit could be bought there at any price. Subsequently, when exporters here began to quote again, their prices were higher; but it was noticeable that the Hamburgers bought at the advance figures with just as much eagerness as they had manifested before the raise, showing plainly that it was not the condition of the market abroad that caused the lower quotations in the first instance, but the lack of an understanding of the situation by our own people and an organization that would enable them to take advantage of it.

We Should not Compete with Each Other Except in Quality.—As between California exporters there should be no rivalry as to price. Let them contend as to who shall pack the best, but in quoting certain grades the price demanded by each should be the same. Otherwise, they virtually put California fruit in competition with itself and the result is to confuse the trade and unnecessarily depress the market.

The American Consul-General at Hamburg says on this subject in a letter, from which I shall quote more fully further on:

It is but natural and proper that Americans should engage in a healthy and spirited competition against each other in their own country, but in reaching out for a new and difficult foreign field they should stand organized and united.

This sage advice is the result of four years' close study of the situation by a keen business man and an experienced and able diplomat; and bearing as it does so directly on the situation as regards the California fruit trade abroad, it should be pondered seriously by our people.

It would undoubtedly be better for the grower, the packer and the State at large, if some arrangement could be entered into by which prices that would insure a reasonable profit to the producer

could be agreed upon early in the season. Such an arrangement, besides insuring the grower against loss, would be notice to the canner and packer as to what his pack would cost, and he would be able then to agree with his neighbor in the same business as to what they should quote their goods for to the trade. Of course, we know hundreds will rise up to say that the growers will not organize and that the packers will not agree as to price. This point we are not proposing to dispute or argue, but are simply trying to show the advantages that might be theirs if they would.

It is not the purpose of this paper to engage in predictions, but I hope to be pardoned for saying that I believe if this method could be adopted, and along with its inauguration, a limited amount of means be provided for educating the people abroad regarding our products and pushing the foreign market, the fruit business in California would soon find itself on a sound and profitable basis, and the day would be much nearer when this State could dictate the prices of canned and dried fruits to the world.

Our Dried Fruits Excite Most Interest.—Of the California products exhibited in Germany that attract the most attention and that are likely to find the most ready market, the dried fruits take the lead. Our prunes there are well liked, but they meet a severe competition from France, Austro-Hungary, Bosnia, Servia, Slavonia, Bohemia, Moravia, Bulgaria, Romania, Bessarabia, and other prune countries of the old world. It might be of interest, however, to mention in this connection, that according to the best authorities, the prune crop outlook for Europe at the time I left Germany was estimated to be considerable short of an average. Unfavorable weather was reported in Austro-Hungary and Bosnia. The prunes were dropping in Bohemia, Slavonia, Moravia and Upper Hungary; while in France, owing to hail and late frosts, the crop was estimated to yield but little more than half of the average. These reports, I understand, have been mostly verified by results, and hence, though California has an unusually large crop this year, the supply in the world is, from the best authorities obtainable, some millions of pounds short.

In Germany the prune is largely consumed, and is well understood. The imports of this product into Hamburg alone last year (1896) were 2,729,700 kilos. (A kilo is 2½ English pounds). Bremen the same year imported 86,700 kilos. These are sea ports and it must be remembered that only a portion of the prunes which find their way into Germany from France and the South countries of Europe are sent there by sea.

They have dried peaches, apricots, pears and plums in Germany, but as compared with the California product they are inferior, and therefore can hardly be considered competitors. The peach and the pear are not so popular with the Germans as the prune and the apricot. The former, as I have said, is a staple article with which they are familiar, and they especially like the latter by reason of its sub-acid flavor. As they become better accustomed to the methods of preparing the pear and peach, these articles will grow in favor and correspondingly in demand.

Germany consumes a great many raisins. Last year the receipts of this fruit at Hamburg alone were 9,207,600 kilos. More than two-thirds of these were from Asia Minor. Spain supplied 559,900 kilos, and the United States (California) 249,400 kilos. Of these more than three-fourths were sold through Eastern houses. They like the California raisins but object to paying anything extra for clusters or fancy packing. The three and four-crown loose Muscatels in fifty pound boxes is the pack and brand most in favor with the trade in Germany.

Our Canned Fruits.—It is in the line of dried fruits, as we have said, that California will be able to do the best business with Germany. We can sell some canned fruits; we are selling some, and they are very much liked; indeed, they are considered to be the best in the world, but owing to the excessive tariff of 60 marks, equal to about \$15, per hundred kilos, they are necessarily a great luxury. There are, however, in Germany a great many people who can afford luxuries, and it appeared to be the general opinion that as the superior excellence of our canned fruits became better known the demand for them would increase, as that class who like good things and can afford good things would insist on having them whether the price per can should be two marks or three marks. As bearing out this idea, a gentleman who recently opened a depot for California products in the city of Berlin, the capital of Germany, and the center of German wealth and German aristocracy, reports that his trade in canned fruits is increasing at a very gratifying rate.

Germany imports a great many dried apples from America, but they go mostly from States east of the Rocky mountains.

California Wines.—California wine has found a lodgment in Germany, though most of those dealing in it thus far, as nearly as can be ascertained, obtain their supplies through New York houses. Our sweet wines, especially the better grades, they admit compare favorably with the favorite sweet wines of Spain and other European countries, and it is the general belief that a business can be done in that country in this line of goods. Our dry wines

are objected to as being too heavy to suit the custom of the country. The German likes to drink his wine as he does his beer—freely and generously, without feeling any present or after bad effects. Still, the flavor and purity of our wines go far to commend them, and as among so many people there are many tastes, there is no reason why we should despair in the effort to constantly enlarge the demand there for this line of our products.

What is true of our dry wines is true of our brandy. The only objection urged against it that we heard was that it contains too much alcohol.

Other Products.—Germany imports a great deal of fresh salmon from this coast, mostly from the Columbia river. The receipts of this article at Hamburg last year aggregated about 6,000,000 pounds. It goes through in cold storage and is in great favor there. The tariff on canned salmon is the same as on canned fruit, and hence the importations are limited. Some little finds its way into that country, however, but mostly by way of England and through English importers.

In honey and beeswax we are doing some business with Germany, and can do more if the trade is pushed a little. A Mr. M. Scherpel, late of San Francisco, opened out in Hamburg this summer as a buyer and importer of California products, and he informed us that the first business he did was to sell a carload of California honey.

German Imports.—As showing the imports into Germany of certain staple California articles for the year 1896, and the proportion of such articles furnished by the United States, the following table compiled from figures obtained through official and semi-official sources will be interesting:

| | Total Import. | From United States. |
|------------------|---------------|---------------------|
| Wheat..... | 18,527,054 | 2,668,752 |
| Rye..... | 10,306,703 | 617,588 |
| Oats..... | 4,950,541 | 492,851 |
| Buckwheat..... | 253,872 | 97,267 |
| Beans..... | 304,249 | 7,120 |
| Peas..... | 823,125 | 5,534 |
| Lentils..... | 135,908 | |
| Barley..... | 10,281,347 | 455,208 |
| Malt..... | 897,210 | |
| Clover seed..... | 298,706 | 11,886 |
| Fresh fruit..... | 1,046,041 | 78,201 |
| Oranges..... | 313,225 | |
| Almonds..... | 84,331 | |
| Honey..... | 13,747 | 1,150 |
| Nuts..... | 110,187 | |
| Flour..... | 455,351 | 61,688 |

NOTE.—The figures stand for double centals—200 pounds.

Of the 10,281,347 double centals of barley imported, Russia supplied about 5,000,000, Austria about 3,000,000 and Roumania about 1,000,000, and the United States less than 500,000. Denmark, Netherlands, France, Belgium, Argentina and Turkey supply the balance. The price of barley in Germany in 1896 ranged from 150 marks to 210 marks per ton of 2000 pounds, a mark, be it remembered, being equal in exchange to about 24 cents American money.

Germany imports largely of beans. In 1896 the total import of this article was 304,249 double centals. Of these, Austro-Hungary supplied 179,257, Netherlands 40,955, Russia 67,915, and Turkey and a few other countries the balance. The import price of small white beans in Germany last year ranged from 13½ to 14 marks per double cental, and of large white beans from 17½ to 18 marks per double cental.

Germany is a very large consumer and importer of hops, but she gets very few from this country.

Some years ago considerable borax was exported from this country to Germany, but this trade has been cut off. We inquired the reason and were informed that the borax business in Germany is now controlled by a trust, or convention, as they call it there, that owns large deposits of the crude article in Asia Minor and manages to so regulate the market as to keep out borax from other countries.

Canaigre.—California is beginning to grow canaigre, and the comments of the press of this State on the subject have led to the inference that there is a great demand for this article in Germany, where it is used as a substitute for tan bark, and that that country would take all we can raise at a price that would be profitable to the grower. Germany does import canaigre from Mexico, from New Mexico, and it has received a little from California. At one time the price realized was very satisfactory, but the competition lately of other articles that answer the same purpose and contain more tannic acid renders the future outlook for canaigre in that country very dubious, unless we reduce the article to an extract, by which means the price is increased and the freight reduced.

German Tariff on Our Products.—The tariff on the products which California sells in Germany, or has a fighting chance to sell, is as follows:

| | Marks per 100 Kilos. |
|-------------------------|----------------------|
| Dried fruits..... | 4 |
| Canned fruits..... | 60 |
| Canned fish..... | 60 |
| Raisins..... | 8 |
| Wine in barrels..... | 20 |
| Wine in bottles..... | 38 |
| Fresh fruits..... | Free |
| Brandy, barrels..... | 125 |
| Brandy, bottles..... | 180 |
| Beans..... | 4 |
| Peas..... | 4 |
| Nuts..... | 4 |
| Honey..... | 36 |
| Beeswax..... | 15 |
| Olive oil, bulk..... | 3 |
| Olive oil, bottles..... | 10 |
| Barley..... | 2 |
| Wheat..... | 3.50 |

| | |
|---------------|------|
| Rye..... | 3.50 |
| Corn..... | 1.60 |
| Hops..... | 14 |
| Canaigre..... | Free |

As pertinent to the question of our trade relations with Germany, and as bearing directly and with especial force on some of the matters discussed in this place, Mr. Filcher read an able and well written letter from Hon. W. Henry Robertson, United States Consul at Hamburg, showing that he is keenly desirous of assisting in the promotion of American products. Mr. Filcher then continued:

Other Parts of Europe Interested.—While in Hamburg I frequently met people from other countries who assured me that a big business could be done in the articles we displayed in their respective countries if we would but take the exhibit to said countries and show the people what we have. Representatives from Denmark, from Norway, from Sweden, from Russia, from Austria and from England seemed to be almost universally of the opinion that trade in our products, particularly cured fruits, could be greatly stimulated by presenting to their people such an object lesson as we had presented to the Germans. Austria's Consul-General to Hamburg, Von Stephani, personally urged the great increase in demand for our products that would inevitably arise in his country if we would but take the exhibit we had in Hamburg and show it to his people.

These and similar considerations strongly impressed me with the importance of sooner or later extending the work at least to the main trade centers of Europe that has been but commenced at Hamburg. The cry of California has been, "We want a market for our fruits." Europe is that market, but it would be foolish to think it can be captured and held without an effort. The interest in our products is such that the work would be easy, but there must be work. If the funds were available, now would be the time to do this work. With very little expense the exhibit already at Hamburg could be freshened and replenished, and for \$10,000 it could be set up and displayed for, say, a month and a half in each of six of the main trade centers of Europe. Allowing half a month for each move, this would require a year, and a year of such work honestly and energetically performed and intelligently directed, accompanied by the establishment of agencies for the sale and distribution of California products in the different centers visited, would so enlarge the market and the corresponding demand for our fruits that we would be pressed to supply it, and such a demand once started among so dense a population must inevitably grow equal to, if not faster than the supply. As we have said, this work may not be practicable now for want of available funds, but some day, and in the near future, it ought to be done. Later and under less favorable conditions it will cost more, but it will never cost as much as it is worth. Estimating the California dried fruit crop annually at 100,000,000 pounds, and it is considerably more, it can readily be seen that anything that will advance the price one mill, or a tenth of a cent a pound, is worth to California \$100,000. Anything that will advance the average price half a cent a pound is worth to the State half a million dollars, and an advance of a cent a pound is worth a round million dollars. Hence, when a good and promising field stands to be explored, when a promising market stands to be opened up, this State cannot afford to quibble about the expenditure of a few thousand dollars.

In extending the markets for their products, whether at home or abroad, let me suggest to the fruit growers a motto or a guide to action. It may be expressed in three words, "Organize and advertise."

FORESTRY.

Forests and Rainfall.

Prof. H. A. Hazen presented a paper at the last meeting of the American Forestry Association—a paper which will be read with interest by many Californians, for the relations between forests and rainfall have been a favorite theme of discussion in this State ever since the American occupation. Prof. Hazen begins by asking:

Can it be possible that the cutting away of forests affects the amount of precipitation in any locality? To many no doubt this question will seem easy of answer, but we find the results of study by no means reassuring, and recent investigations have led to almost diametrically opposite conclusions, depending, somewhat at least, upon the feeling of the writer. When we reflect that our rainstorms are of very wide extent, oftentimes over 1000 miles in diameter, and may take their origin and bring their moisture from distances of 1000 miles or more, the thought that man, by his puny efforts, may change their action, or modify it in any manner, seems ridiculous in the extreme.

It has been well established that forests have a most important bearing upon the conservation of

rainfall; that the forest floor permits a seepage of water to the source of springs and thus maintains their steady flow; that they hold back the precipitation that falls, especially in the form of snow, thus preventing or ameliorating the effects of dangerous freshets. There is not the slightest doubt of their great importance to the welfare of man, but all these facts do not affect the question of their influence upon precipitation. The following paper is prepared from the standpoint of a meteorologist, and is an attempt to present facts:

The Historical Argument.—Formerly, the historical argument was a favorite one. I quote one of these: "It is a familiar fact that there are many regions in Asia and southern Europe, once exceedingly fertile and densely populated, that are now utterly sterile and desolate. The country bordering on the Euphrates and portions of Turkey, Greece, Egypt, Italy and Spain are now incapable of cultivation from lack of rain due to deforestation." The most fertile of all provinces in Bucharra was that of Sogd. Said Malte Brun in 1826: "For eight days we may travel and not be out of one delicious garden." In 1876 another writer says of this same region: "Within thirty years this was one of the most fertile spots of central Asia, a country which, when well wooded and watered, was a terrestrial paradise. But within the last twenty-five years a mania of clearing has seized upon the people, and all the great forests have been cut away and the little that remained was ravaged by fire during a civil war. The consequences followed quickly and this country has been transformed into a kind of arid desert. The water courses are dried up and the irrigating canals are empty." It has also been said that in the older settled portions of New England and the Middle States there are arid hills and worn-out fields, due to the falling off of precipitation from the cutting away of the forest growth. Such quotations and statements might be made to fill a large volume. Without more precise data as to rainfall it would be hazardous to conclude that we have here a case of cause and effect. It is certain that the fertility of these regions in ancient times was due to stupendous irrigating devices and canals, and when these were neglected, through wars and other untoward circumstances, the fertility necessarily ceased. It is certain that there are ruins of enormous irrigating ditches and canals in Babylonia, where history indicates that there was once a teeming population and great fertility, but where now only a sandy desert greets the eye.

Is the Forest a Cause or an Effect?—Some have said that where our densest forests are found there we have the greatest precipitation. There is no way whereby we can see that such forests would have started unless favored by rainfall, so that the presence of the forest rather indicated the earlier occurrence of practically the same rainfall as at present. Meteorologists are agreed that there has been practically no change in the climate of the world since the earliest mention of such climates. Plants found in mummy cases in Egypt that were plucked thousands of years ago show the same size as those now found in that land. The "early and the latter rains" are experienced in Palestine to-day just as they were four thousand years ago. Jordan "overflows all its banks" to-day in February precisely as it did in Joshua's day. When we come down to recent times, and to the records of rainfall measured in New England for more than one hundred years, or, at least, before and since the forests were cut, we find a constancy in the rainfall which shows its entire independence of man's efforts. Right here it should be noted that totally barren lands of any extent, in New England for example, are to be found only in imagination. Even where the forest has been cut away mercilessly there springs up a growth of sprouts which covers the ground and answers almost the same purpose in causing rainfall (if there is any effect of that kind) as the forest. Even where land is entirely cleared of a forest we have at times the green pasture, and at others still heavier crops which leave the ground anything but a sandy waste.

Rainfall Measurement in Forest and Open.—But the strongest argument adduced in the past to show the influence of forest on rainfall has existed in a comparison between rain-gauge measures in the forest and the open field. Such records have been made for more than thirty years in France and Germany and surely we must have here, if anywhere, a sufficient proof of a forest's influence.

Admitting that we have perfect instruments and careful observers, there still remains a most serious doubt as to the immediate environment of each gauge and as to the possibility of a direct comparison. It is probable that no two gauges 2000 feet apart can be placed so as to catch the same amount of rain, though to all appearances the exposure is faultless in each case. This is plainly seen on the roof of a building. For example, before the office of the Weather Bureau was removed to its present location in Washington, eighteen rain gauges were placed on the roof and one upon the sod not 500 feet away. There was only one of the gauges that gave the same rainfall in all storms as the one on the sod. Some of the others gave more in some storms and some less, but all of them in the total rainfall of eight months gave less than the one which compared

exactly with the sod gauge. In an early publication of rainfall records in this country (not by the Weather Bureau, however) two stations are given—Marengo and Riley, in Illinois—not more than three miles apart, but yet differing by 19 inches in the total annual precipitation for several years. I have no doubt that in the latter instance one or both gauges were badly exposed; but enough has been said to show the extreme caution needed in studying such records and the absolute necessity that exists in obtaining a comparison between gauges that are not affected harmfully by their surroundings.

The French Investigations.—One of the best of all researches in this line has been conducted at Nancy, in France. Within a distance of five or six miles there have been four stations established—at Nancy in the open and at Belle-Fontaine in the forest and, 500 feet higher vertically, Amance (open) and Cinq-Tranchees (forest). The latter stations are in a more hilly region and cannot be compared together, as can the former. At the lower stations we have comparative observations for twenty-five years. I have summed these in three groups, containing eight, eight and nine years in each group. First group, Nancy (open), had 31.16 inches, while Belle-Fontaine (forest) had 32.46 inches; second group, 33.39 inches and 34.07 inches; third group, 30.05 inches and 29.89 inches. We see that, while the first eight years showed a very slight excess in the forest rainfall over that in the open field in the last nine years (including 1894, last published), the open station showed a little more rain than the forest station. These observations were made with particular care, for the purpose of exactly determining the influence, and may be relied on if the environments of the gauges were comparable. At Amance (open) and Cinq-Tranchees (forest) the observations have not been quite so regular, though we have twenty-five full years of records at these two stations, but not the same years as at the other stations. Amance shows 26.70 inches and Cinq-Tranchees (forest) 33.39 inches, or an apparent preponderance of 6.7 inches a year in the forest. This would make more than 20 per cent greater in the forest than in the open. It should be borne in mind, however, that these last two stations are on an eminence, and are not strictly comparable, and this result cannot vitiate that at the two other stations, which shows no effect.

German Observations.—In Germany we have a rather remarkable record of a slightly different character. Lintzel is a station on the Luneburg heath, which began to be planted with trees in 1887, at the rate of 1000 to 1500 acres a year, and in a few years over 8000 acres were covered. In the midst of this forest is the meteorologic station in an open field of some seventy-five acres. Before planting the forest 97 per cent of the surface was field, meadow, or heath, and afterward 80 per cent was forest and 20 per cent was roads, open field, and heath. Around this station, pretty evenly distributed, and within fifty miles, there are thirteen rainfall stations, which have been carefully established and presumably are comparable with the Lintzel station in the midst of the growing forest. There is no means of knowing whether any of these stations have been changed or not, but for our purpose we may consider the material homogenous and treat it accordingly. Records from 1882 to 1896 (fifteen years) are available. Charts were prepared for each year, showing the ratio between the Lintzel record and that at each station of the thirteen. There is no space for these charts, but, in place of them, I give here the mean of all the thirteen station ratios for each year: 1882, 81; 1883, 83; 1884, 101; 1885, 103; 1886, 82; 1887, 98; 1888, 93; 1889, 122; 1890, 97; 1891, 100; 1892, 90; 1893, 96; 1894, 142; 1895, 128; 1896, 136.

The Figures Not Significant.—These figures are extremely significant, and may be further elucidated as follows: The smaller ratios show a less rainfall at Lintzel as compared with surrounding stations. It is impossible to determine whether these trees have reached the culmination of their effect or not. In 1896 most of them would be seventeen years old, and the ground would probably be fairly covered. It is a great pity that the environment was changed or some accident happened at Lintzel so as to vitiate the three last years. (As inquiry was sent to Germany regarding the error, but no response has yet been received.) The record does not seem to show any appreciable effect upon the precipitation; in 1884 the ratio was 101, while in 1893, nine years later, it was 96. It is probable that no definite and unassailable result can ever be obtained either by the method adopted in France or this later one in Germany. The rainfall is so variable within a distance of even a mile or two, and it is so difficult, if not impossible, to obtain similar environments at all the stations, that no decisive result can be obtained. It will be seen readily that the multiplication of stations will do no good, and, above all, that the observation of rainfall under trees in a forest is absolutely useless for any such discussion or study as this.

It seems probable that if two or three lines of stations could be established a mile or two apart on four sides of an enormous forest, each line to have a dozen stations or so, about 3000 feet apart, four of the stations to be outside of the forest and the others each in a large, cleared space of at least two acres

extent in the forest, something decisive might be obtained. It should be noted, however, that from the evidence already accumulated there would be very little to be gained by a further study of the question. It is certain that the effect, if there be one, is almost inappreciable. The favoring conditions over the forest are balanced by those not favoring and the integrated effect is practically the same in the two cases.

An Inappreciable Gain.—Prof. H. F. Blanford of India determined from a most careful series of records, from which all known errors had been eliminated, that the forest had a tendency to give 2 per cent more rain than contiguous open fields. That is, if an open place had 50 inches of rain in a year a near-by forest would have only 51 inches, which is practically inappreciable.

It would be an interesting study to select all those cases in experiments in forest and near-by fields in which the wind was blowing either from the forest to the field, or vice versa. It is evident that if there is any effect on rainfall by the forest, it would be vitiated if not exactly reversed by such winds.

There is a class of visual observations which seem to show an effect upon rainfall by the forest. Probably many have seen heavy clouds passing over a plain, but which only precipitated as they passed over a forest. Also in a hilly region it is a frequent phenomenon that fog and low-lying cloud hover near a forest, and not over an open plain. One also notes very often in passing into a forest on a damp day that the trees drip moisture, possibly condensed from moisture evaporated from the damp earth underneath. Observations of this nature, however, cannot ordinarily be checked by instrumental means, but show in a general way that the forest tends to conserve vapor and moisture which in the case of the open field would be diffused into the atmosphere.

AGRICULTURAL ENGINEER.

Some Considerations About Roads.

At the University Farmers' Institute recently held at Petaluma, a paper on road making was read by N. S. Frost, a civil engineer. It was an excellent paper throughout but some statements and illustrations were especially striking. We shall reproduce some of them.

Direction of Roads.—The first consideration in road making is the direction. The road should run in a direct line between the initial and the terminal points. Though this principle would seem to be self-evident we frequently see it violated, particularly in the Western States, where the favorite system is to have the roads run on the section lines regardless of topography, convenience or anything else. And yet in nine cases out of ten this is the very worst system that could be adopted. Topography does not run according to section lines, nor do railroads, and these are the guiding features in the location of towns, and yet in laying out a system of roads to connect these towns, it is thought necessary that all the roads should point straight to the north pole, as if every wagon was a relief expedition and loaded with grub for the frozen-in-whalers. I had some experience of the beauties of this system in San Joaquin county. The railroad, which, of course, governs the location of the towns, runs nearly northeast, while the roads follow the section lines, so it was necessary to travel twenty miles south and west to reach a point only fifteen miles distant.

Circumstances, however, alter cases, and while in geometry the straight line is the shortest distance between two points the rule does not always follow in road making. A straight road in a hilly country is a bad road, because either the grades would be very steep, or it would cost a great deal of money to reduce them. The road should wind around the hills instead of climbing over them, but this simple principle is too often disregarded. Roads are carried over short spurs that they might just as well go around, and in many cases the distance would be but little, if any greater. Suppose the half of a watermelon or pumpkin is lying on the ground. It is evident that a straddle bug meeting with this obstruction in his travels, would have no farther to go in passing around it, than if he climbed over it, and it would be a good deal easier. Five hundred feet of elevation is equal to a mile or more on a common road, and considerably more than a mile and a half on a good macadamized one. And this brings us to the proposition that the better the road the greater the evil of grades. For instance, on a railroad, where the resistance is about eight pounds to the ton, or 1-280, a grade of about four inches to the hundred feet will double the resistance and consequently the power required, while on a common road where the resistance is seldom less than 1-20, it would require a grade of five feet to the hundred to double the resistance. On a good macadamized road two feet per hundred would have the same effect. This, however, is no argument against improving the surface of a mountain road.

Importance of Grades.—In establishing a new road there are always some points through which it must pass, say certain low passes in the hills. Between

these points the road should follow the grade contour line so that the grade from one ruling point to the other shall be uniform, the uniform grade being always the minimum. In a long ascent it is allowable to introduce level or nearly level stretches, especially at the bends, but there should be no descent on the downgrade, as that would necessitate climbing two or more hills instead of one. Two villages with unpronounceable Indian names, in the State of New York, located twenty miles apart, on an equally unpronounceable creek, have a difference of elevation between them of 800 feet. The most level common road between them rose more than 1200 feet in going up the creek and more than 400 feet in going down. The line of a new plank road laid out by a competent engineer rises only the necessary 800 feet on the ascent and has no up-grade at all in the other direction, thus saving one-third of the height in one direction and all of it in the other. Gillespie, in his work on road making, speaks of a road in England where Telford saved 1283 feet of perpendicular height and more than two miles in distance between two points twenty-four miles apart.

Drainage of Roads.—The improvement of our present roads, however, is a more important question at present than the laying out of new ones. The surface should be hard and smooth, free from dust in summer and mud in winter. How is this to be accomplished? The first and most important requisite is thorough drainage. The water must be kept off the roadway, for while drainage alone will often convert a very bad road into a passably good one, no possible amount of labor or expense will make even a tolerably good road until the water is gotten rid of. The roadbed should be well crowned, and provided with capacious ditches on each side, and these ditches should be kept clear of grass, brush and rubbish; the water should have free access to the ditches from the road, and from the ditches to the natural watercourse.

The Surface.—The surface of the roads should be hard, smooth and non-elastic. A surface of India rubber might be very pleasant to drive over, but it would be killing on the team. As to the importance of smoothness, let us see what is the effect of a stone or rut. Suppose a wagon with its load, weighing one ton, meets a rock four inches high, what will be the power required to pull over it? Let the radius of the wheel be twenty-six inches; the load on it will be 500 pounds. Now, it is easy to calculate from the leverage, that it requires a force of a little more than 314 pounds to pull the wagon over this obstruction. If the road is a tolerably good one the tractive power required to draw the wagon over it will be about one-twentieth of the load or, in the present case 100 pounds. Thus it appears to draw one wheel over a rock four inches high requires more than three times the power that it required to draw the whole load over the rest of the road, but of course no one ever saw a four-inch rock on any of our Sonoma county roads. Take as large a sledge-hammer as you can swing and bring it down on the axle with a force of 170-foot pounds and you have the effect of dropping into a four-inch rut. I have known a four or five-inch chuckhole that could have been filled for 10 cents to cost the owner of the wagon more than \$10, and that not very long ago nor very far from Petaluma. If the road is an earth road there should be no stones allowed upon it, as earth and rock can not wear equally and sooner or later stones will project above the surface, and about the worst thing that can be done with a rut is to fill it with stones, as that will soon make a ridge instead of a rut, and while ruts are great friends of the wheelwrights, ridges are by no means friendly to teams.

A great preventive of ruts is wide tires and sprinkling. The sprinkling is being provided for by the Supervisors of this county, and the taxpayers will soon find that the pumps and water wagons are as good an investment as could be made.

Rolling.—Whether the road is of earth, gravel or macadam, it should be rolled with a good heavy roller, a ten-ton steam roller being far the best, and the rolling continued as long as any settlement can be observed, filling all depressions as they appear, and, in case of a gravel or macadam road, the roadbed should be thoroughly rolled before the gravel or broken stone is placed on it. It should be borne in mind that the object of macadamizing is to provide a hard surface for the wheels and to keep the water from the surface of the roadbed. The roadbed has to carry the weight of the stone covering as well as that of the traffic over it, and it is useless to place the covering until the roadbed is prepared for it.

The Supervisors of Sonoma county have made a good beginning by providing pumps and sprinkling wagons. Now let them go a little further and provide one or more ten-ton steam rollers, portable rock breakers and road graders. Most of our roads contain enough rocks to go a long way towards macadamizing a tract from eight to sixteen feet wide, and there are quarries accessible to all. Let the rocks be removed from the roads, and passed through the breaker. The steam roller will furnish power both to transport and operate it, the roads properly graded, the broken rock replaced, and the whole thoroughly rolled. A few years of this, and Sonoma county roads will be a model for the State and will repay the cost over and over again.

THE HOME CIRCLE.

When Mother Looks.

I'member such a lot of things
That happened long ago,
When me an' Jim was six weeks old—
An' now we're ten or so.
But those I remember best—
The ones I most can see—
Are the things that used to happen
When mother looked at me.

One time in church, when me an' Jim
Was snickerin' out loud—
The minister was prayin' an'
The people's heads was bowed—
We had the biggest kind of joke
About a bumblebee.
But things got quiet pretty quick
When mother looked at me.

And then there's sometimes when I think
I've had just lots of fun
A-goin' in a swimmin' with the boys
Down there by Jones' run,
But just when I get back home again—
Just 'bout in time for tea—
There's a kind of differ'n't feeling comes
When mother looks at me.

That time when I was awful sick
An' the doctor shook his head,
An' every time pa come around
His eyes was wet an' red;
I'member her bands on my face,
How soft they used to be—
Somehow the pain seemed easier
When mother looked at me.

It's funny how it makes you feel—
I ain't afraid of her.
She's about the nicest person
You'd find most anywhere;
But the queerest sort of feeling,
As queer as queer can be,
Makes everything seem different
When mother looks at me.

—Letchwood Smith.

Santa Claus Came.

"If you please, sir—"
"Eh? What now?"

The crusty old gentleman turned suddenly and sharply, and glared from beneath his shaggy eyebrows at the little figure beside him. The figure was that of a girl eight years old, perhaps, but small and frail. She wore an enormous sunbonnet that might have been made for the wife of the giant Blunderbore, so out of proportion was it to the diminutive wearer, and out of its depths peered a thin little face, with big, frightened brown eyes. Her clothing was so clean and neat that one scarcely noticed how very poor it was, and as she stared up into the terrible face above her one of the little feet wriggled uneasily in the depths of the costly rug.

"If you please, sir, mother said to tell you that she couldn't come up to-day because she's sick."

The childish treble was a little shaken this time, for the shaggy eyebrows were very close to her, and they gave the old gentleman a look that was terrible beyond belief.

He was in a dreadful temper, this crusty old gentleman, and nothing made him angrier than for poor people to get into his house. He hated the sight of poverty, and all his servants had special orders to guard the doors and the gates and see that no moan of woe or want ever reached his ears. And yet, after all, this little beggar had slipped past the bolts and bars into his very study where his own servants scarcely dared to enter.

I don't know what dreadful thing might have happened if it had not been for that one little word "mother" in the child's fluttering speech. Children so seldom speak the word nowadays that it gave a little shock of surprise. Instantly he found himself looking beyond the child, at an old, long-forgotten scene—a little cabin, with a white country road winding past it and an awkward boy going down the road, stopping at the last curve to wave his hand to his mother, who stood in the door watching him go out into the world.

Then he remembered himself and asked sharply:

"And who is your mother, pray, and why should she come here?"

"Please, sir," said the quivering little voice, "mother's the dust woman."

"The what?" ejaculated the old gentleman, with another dreadful frown.

"She comes up once a week and dusts the bric-a-brac," explained the

child. "The housekeeper hired her. She says she doesn't feel equal to it herself, and mother does it so nicely."

"Aha!" muttered the old gentleman with an angry gleam in his eyes under those fearful brows. "So Mrs. Murray brings outsiders into the house when my back is turned, docs she? They're all alike, a pack of cheats and robbers! I'll teach her to violate my confidence, and fill my house with irresponsible people! You may wait in this room till Mrs. Murray comes. Do you hear? And then I shall have a message to send to your mother."

He rang the bell violently, and ordered that Mrs. Murray be sent to him as soon as she returned. Having made this satisfactory arrangement he took up his paper again and ignored the little figure in the sunbonnet.

But before he had read a dozen lines there was a light touch on his arm, and the brown eyes were looking up into his.

"Please, sir, may I look out of the window while we're waiting?"

He was so astonished that he could not reply for a moment, but he did finally give a scornful grunt of assent.

There was silence in the room for a long time. Not a clock ticked, for old Mr. Roberts could not endure the ticking of clocks. Not a leaf stirred, not a cricket chirped. The child was out on the little balcony, leaning on the stone balustrade. Her bonnet had fallen off, and the sunlight falling on the mass of brown hair, wove it full of gleams of gold.

Another touch on his arm—there she was again. Her hand—such a little morsel of a hand—trembled with some emotion, and her eyes shone with a strange light.

"It must be nice to live on a hill!" was what she said.

The old gentleman in the armchair had never been more astounded in his life. He stared at her and forgot to say anything.

"I have always wanted to live on a hill," she went on. "Our house is away down yonder, and you can't see anything but the houses across the street. But up here you can look so far, and the sky's so close to you. Don't you think people can be better when they live on a hill?"

The newspaper fell to the floor unheeded, and the crusty old gentleman and the little girl looked at one another. After awhile the old gentleman went to the balcony and looked down to the roofs of the crowded houses in the narrow streets below and then away to the far horizon. This beautiful home of his crowned the summit of this purple hill, and was uplifted so far above the noise and dust and wretchedness of the city that lay below. Truly, it was a pleasant thing to live on a hill. He had never thought of it before, but all at once he fancied himself down among those miserable tenements, looking up at this beautiful home and thinking how near to heaven it reached.

There was a hurried tap at the door, and Mrs. Murray presented herself. Her comfortable figure was attired still in the neat dress that she had worn in the street. Her round face was wreathed with smiles, but she was obviously fluttered and quaking with fear.

"Did you leave word that you wanted to see me, sir?" she asked, and then waited for the blow to fall.

"Mrs. Murray," said the old gentleman in his stiffest and most formal manner, "am I to understand that you have employed a woman to come here once a week and dust the bric-a-brac?"

"Yes, sir. Mrs. Holmes her name is, and she's very careful, sir. I couldn't do better myself."

She glanced up anxiously at the wooden countenance before her. What terrible thing was he going to say next.

"Mrs. Murray, the woman has sent this child to say that she is too ill to come. That will do. You will excuse her until she recovers."

Mrs. Murray went back to her own room and fell into a chair. If it had been consistent with the dignity of Mr. Roberts's housekeeper to stagger, she certainly would have staggered. She kept repeating to herself: "Did you

ever?" and "I can't believe it." She said afterward that you might have knocked her down with a straw, though that was figurative, of course.

This as the beginning of Marjorie's visits to the great house on the hill. Her mother did not come again, but every day the big sunbonnet went toiling up, and then the glint of the golden hair would be seen in the great rooms where no child had ever strayed before. Not that she was boisterous, or laughing, or childlike in any way. She would sit in Mrs. Murray's room for hours, with her hands folded on her lap, watching the lady at work and sometimes talking softly, or she would follow her from room to room, gazing with rapt delight at every beautiful object.

Mr. Roberts knew that she was in the house, but he said nothing. He was conscious sometimes that the child stopped near him and stood with her hands behind her, regarding him with grave scrutiny, but he did not drive her away, as he might have been expected to do a few weeks before.

He was in his study one morning when he heard Mrs. Murray come into the adjoining room. The door was ajar, and, softly as she spoke, her words came to him distinctly.

"That was a present from my son last Christmas," she said. "Dear boy! He never fails to send me something every Christmas and every birthday."

Then came a small voice, full of wistful meaning.

"Mrs. Murray," it said, "do you like Christmas?"

"Why, Marjorie!" was the shocked reply. "Why, of course, I do! Everybody likes Christmas!"

"I don't," said the small voice—such a desolate little voice it seemed. "I had rather leave Christmas out of the year."

"Marjorie!" No words could express the horror and amazement in Mrs. Murray's tone.

"I would!" The small voice had grown thinner and higher in its painful intensity. "What's the use of a Christmas that never gets to some people at all? There was little lame Peter Franks, who lived in the room opposite to ours, and, oh, he wanted a Christmas so much, Mrs. Murray! He used to hang his stocking up every year, every single year, and he always thought there'd be something in it next morning, but there never was anything—not a single thing—and now poor Peter's dead, and he never had a Christmas in all his life."

"My dear! My dear!"

The old gentleman in the study heard the exclamation, and he knew that the voice that uttered it was full of tears. He rose hastily and slipped out of the study, and then ordered his carriage and went driving.

The day following was Christmas eve. Carriers from town were busy all day bringing in the presents that he had bought for the servants, and there was great happiness in the servants' hall, with much confusion and many awkward attempts to thank the master, who waved off every such attempt with an air of lofty patronage. Outside of this family of servants he had never given any one a present in all his life. He had never contributed to charities, public or private. He had never helped the poor—indeed, he had never listened to their appeals.

He had important business in another city which would keep him away all through Christmas week, he explained to Mrs. Murray, and he must leave that evening. In the afternoon he muffled himself in great coat and furs and drove away, and as soon as the carriage was half way down the hill the servants relaxed from their usual stiff propriety, and began to enjoy themselves in their own way.

A telegram was handed to Mr. Roberts at the station as he was about to buy his ticket. What little things sometimes change the whole course of a life! The information thus received made the trip unnecessary, and, after loitering about the city for a while, he returned home on foot and entered his house quietly by a side door.

Sounds of boisterous merriment came from the servants' quarters, and the

owner of the house frowned ominously. So this was the way they took advantage of his absence?

He made his way to his study, unseen by any one, and shut himself in—a lonely, selfish, desolate old man. Even the fire, which still burned in the grate, annoyed him, and he withdrew behind a screen and threw himself into an easy chair. He heard Mrs. Murray come in after a while, but she only moved about softly and decorously, setting things in order, and he did not speak. She was just passing into the sitting room when she gave a little cry of alarm, followed by the exclamation:

"Mercy me, child! How you frightened me!"

"Mrs. Murray," said the thin little voice—a voice that Mr. Roberts had heard before—"I've come up to stay all night!"

The listener behind the screen heard Mrs. Murray fall into a chair, and again she cried, "Mercy me!"

"I just had to come!" the eager voice went on. "Mother's very, very sick—and she needs things, Mrs. Murray—and maybe Santa Claus might bring 'em if he knew—and how is he to know when he never comes there? But I know if I went to some fine house he'd come and find me, and so I came."

"Poor child! Poor child!"

Mrs. Murray had gathered the little waif to her bosom and was rocking her softly to and fro. The old gentleman behind the screen could see that by the shadow on the floor. He could see, too, that the housekeeper was furtively wiping her eyes.

Presently she rallied and said cheerily: "I'll tell you what we'll do, Marjorie. I'll go right down and see your mother, and you shall go with me, and, who knows, maybe Santa Claus will come there, after all."

"Oh, no, he won't!" replied the child with sorrowful conviction. "You don't know that place! Santa Claus has never heard of it! He goes to rich people's houses, and so I've come here and I must see him to-night—oh I must, Mrs. Murray! I don't care for any other Christmas after this, but I must see him to-night, on mother's account, you know."

There was a dismayed silence on Mrs. Murray's part, but presently she said:

"Well, come along into Mr. Roberts's study—thank goodness he's away from home—and sit there before the fire till I come back. I'll take John and go down and see your mother."

In another minute the sound of her retreating footsteps had died away, and the old gentleman, peeping from behind the screen, saw a little figure sitting before the fire gazing intently into the glowing coals.

Dusk was settling down over the city. He had not been conscious of it until the electric burner above his table flashed into sudden radiance. The flash started the child, and he heard her moving softly about. What was she doing? Preparing to steal something, probably. These children from the tenement districts were all thieves.

But, no! When he ventured to look again, she was at the study table—his table—writing. She had his sacred pen, which no other mortal had ever dared to touch, and she was writing slowly and laboriously. Could presumption go farther than that? What would these people be trying to do next?

It took her a long time to write the letter, but at last it was finished, and she laid down the pen with a weary sigh. Then she unrolled a little bundle that had been lying beside her and shook out—could the watcher believe his eyes!—a stocking—a poor, forlorn, ragged little stocking! Now what could she want with that?

She stood on tiptoe and peered around the corners of the mantel for a place to hang it. Finally something struck her fancy as suitable, and she began pushing a heavy chair toward the mantel. When it was near enough, she climbed upon it and hung the stocking upon the "brave caduceus" of the bronze Mercury that he had bought last year in Rome and for which he had paid such a price!

Presently she had jumped down and

was surveying the stocking with the greatest pride. Then the note was carefully folded, and she climbed upon the chair again and pinned the folded paper to the toe so conspicuously that the winged Mercury seemed to stand there for no other purpose than to hold up a ragged stocking for all the world to see.

And then—why, then she was lying down upon the rug with her thin cheek on her thin little hand, and the listener heard a tired sigh.

After a long while the old gentleman behind the screen ventured to move slightly. After a little longer he moved again, and so gradually came out of his hiding place.

Was that old Mr. Roberts tiptoeing across the room to keep from startling the poor little waif sleeping on his hearth rug? Was that the sordid old man whom even his friends had come to call a mere money machine, that man whose hands trembled as he unpinned the little note and spread it out before him?

DEAR SANTA CLAUSE—When you come to-night please look at me. I'll be down on the rug. You've never seen me before. You needn't give me anything but please fill the stocking with things for mother she's sick. I tied up the toes so they wouldn't drop out. The Doctor says wine and things and housrent.

MARJORIE HOLMES.

For a long time the old man sat in the chair before the fire. Something within him was breaking the cold and selfish crust that years had helped to form. He sat there looking from the sleeping child to the forlorn little stocking and from the stocking to the child. It was the first time a stocking had ever been hung up in his house—the first time!

Suddenly the old gentleman rose. He lifted the child gently and laid her on a couch which had always been sacred to his own use, and covered her with rugs. Then he went softly out, and astonished the unsuspecting servants by appearing among them and ordering the carriage.

Could this be old Theodore Roberts, the money machine, the selfish, brusque, irritable old man—this man who went from store to store, ordering and buying and spending money as he had never spent it before? Could this be the Mr. Roberts that Mrs. Murray knew—this man who went into that sickroom, followed by a great hamper filled with "wine and things and house rent"? Was this the man that all the charitable organizations shunned, this man who drove about half the night, leaving behind him a trail of Christmas rejoicing, mingled with such blessings as he had never heard before?

And who was it that drove up the hill at last under the silent stars, with a carriage full of bundles and with a strange, soft feeling tugging at his heartstrings? He smiled as he went, and yet he had to keep wiping his eyes. He was glad it was dark so that no one could see.

And what strange figure was this in the study afterward, this figure that moved so stealthily and that was so busy stuffing the stocking until it was ready to burst, and pinning things all over the outside of it until the bronze Mercury seemed almost to stagger under his burden. What had come over the old gentleman whom so many people envied and whom nobody loved?

Just before day, Mrs. Murray, coming softly in, found him sitting by the fire, watching the sleeping child.

"It'll be a sad time for her," she said. "Her mother's gone, and whatever's to become of the little thing, I don't know."

"I don't see why the child shouldn't stay here, Mrs. Murray," said the old gentleman, with his face turned the

other way. "It would be some extra trouble for you, but I dare say you would not mind it."

"S—sir!" Mrs. Murray managed to articulate.

Then the old gentleman turned around and she saw what was shining on his cheeks.

"Do you see that stocking, Mrs. Murray?" he cried, in a voice that she had never heard before. "That's the first stocking that was ever hung up in my house. It looks homelike, doesn't it? I have decided that we'll have stockings hung up every year. And here's a child that needs a home, and, thank heaven, I've a home to give her."

The child sighed and stirred and then suddenly sat up.

"Did he come?" she cried eagerly, with a dazed look at the bursting stocking, and the old gentleman beside her gathered her up in his arms and said:

"Yes, my little one, he came!"—Philadelphia Times.

Gems of Thought.

Beauty and ugliness disappear equally under the wrinkles of age. One is lost in them; the other hidden.—J. Petit-Senn.

There can be no coward or craven more abject than a minister with any conscience, who appears in the pulpit after an idle, dishonest week, to cheat his congregation with a diet of fragments, seasoned with counterfeit fervor.—James Stalker.

To be sensitive is to be lovable; but to carry sensitiveness into self-consciousness is to be very unlovable. The one safeguard against such a nature is to look out, and not in. To think what we may be able to do for other people, not what they might do for us—that is the key-note of harmony.—Lillian Whiting.

So far as it is possible, I should say that the evening should not only be spent at home by the various members of the family, but they should spend it together. Simply to be at home does not answer the home requirement. To be thoughtlessly or selfishly absorbed in one's own special pursuit, absent or apart from the home circle, is not discharging the duty. To be in the house is not to be in the home.—J. F. W. Ware.

The covetous man has many tools to work with. If deceit suits his purpose, he will use it to the best of his skill; if cruelty will save a penny, he will not hesitate to kill a poor debtor for the price of his skin. No turn, either in State or religion, can hurt him; he receives any impression and runs into any mould the times will give him. He is a Christian at Rome, a Heathen at Japan, and a Turk at Constantinople; what you will without and nothing within.—Ibid.

Alas! what reason have we to think any other station in the universe more sanctifying than our own? There is none, so far as we can tell, under the more immediate touch of God, none whence sublimer deeps are open to adoration, none murmuring with the whisper of more thrilling affections, or ennobled as the theatre of more glorious duties * * * * Those to whom the earth is not consecrated will find their heaven profane.—James Martineau.

Popular Science.

Father Tacchini, director of the Royal Observatory at Rome, has recently published a resume of his observations on sun spots for the first half of the present year. From this it appears that the surface of the sun is becoming more and more quiescent as the minimum of the sun-spot period approaches. "I have observed no eruptions during six months," says Father Tacchini; and he adds, after speaking of other indications of lack of activity, "One might therefore almost affirm that the constitution of sun spots had undergone a change!"

In his report on the reindeer in Alaska Commissioner Harris thus describes the useful qualities of the ani-

mal: "Providence seems to have adapted the reindeer to the peculiar conditions of Arctic life, and made him at once the best helper to man in the matter of transportation of supplies, the surest source of animal food, and the producer of the warmest clothing. His horns and hoofs furnish the best material for the making of glue; his hair, on account of its extreme lightness, is the best for use in the construction of life-saving apparatus, and he also furnishes the possibilities for large and wealth-producing industries."

Fashion Notes.

Silver blue and pale golden russet colors are combined in demi-dress costumes of drap d'ete and repped silk.

A tailor-made gown recently worn by a smartly dressed woman, who imports her things from Paris, was of shepherd's plaid in black and invisible green. The skirt, unhappy to relate, dragged 2 or 3 inches on the ground. It was fitted with exactness about the hips, and the only fullness at the belt was one plait on either side of the opening in the center back.

The jacket was extremely short, and the sleeves were without fullness in the armhole. Instead, an enlargement was made by a series of small darts. This is an entirely new idea in sleeves, but it remains to be seen whether or not it will be universally adopted. It has much to recommend it, for while it gives freedom of movement to the arm, it dispenses with the heavy seams necessary when the sleeve is gathered into the armhole, as in the old-time way.

For walking dresses, woolen tissues hold their own, especially at present, in vicunas, chevots and cloths. There is, in that kind, a dress most simple and exceedingly well thought of—dark green skirt of vicuna, trimmed with braid of the same color, embroidered in jet, and laid flat on the front of the corsage, right up to the collar, which is very high, tight fitting and quite plain. The waistband is of green ribbed ribbon, fastened with a jeweled buckle. A second costume is of beige cloth, the skirt being trimmed with an edging of feathers in tone. Fancies in feathers are numerous this winter, and with the plumage of the vulgar poultry yard kind some ornaments are made truly elegant, though simple.

The high, stylish collars attached to the jackets for Russian blouses worn this season are not infrequently made of or lined with ermine, and very unbecoming it is to most faces, with its trying blue-white ground, especially on a very cold day. The warm, creamy white and the soft golden brown of the grebe is far more kind to its patrons, and the "fur," as this plumage is often called, is as fashionable this year as it was last, if not more so.

Black and colored velvet ribbon less than 2 inches wide forms the latest thing in neck novelties to cover the plain collar band. A yard and a quarter of the ribbon is tied plain around the neck, with a bow at the back, and on this, directly in front, another small, flat bow, with a fancy buckle in the center, is attached.

A half-worn light silk waist may be very satisfactorily refurbished by stripping it crosswise with black velvet ribbon, putting velvet ribbon around the plain collar band as previously described, and adding a new chemisette neck of lace and a velvet belt.

A jeweled pin, similar to a safety pin in shape, is worn to fasten up the curling locks at the nape of the neck.

DOMESTIC ECONOMY.

Domestic Hints.

CELERY SALAD.—Take half a head of cabbage and three bunches of celery chopped fine. Mix well one cupful of vinegar, a lump of butter the size of an egg, the yolks of three eggs, a teaspoonful of mustard, one of salt, the same of pepper and two of sugar. Heat this mixture on the stove until it thickens, stirring constantly. When cold add two tablespoonfuls of sweet cream or olive oil and pour over the celery and cabbage.

OYSTER SOUP.—If a chicken pie is made, take one pint of the water in which the chickens were boiled, one quart of oysters and their juice, and one quart of milk. Heat up the oysters in their own liquor and the stock. As soon as they boil add the milk, which should be heated boiling hot, and thickened. To thicken it use a tablespoonful of flour, mixed with the same amount of butter. Let a little of the milk simmer with this thickening, then add it to the remainder heated boiling hot, and then add the whole to the oysters, which have just begun to boil. Stir well, and when the soup boils again season it with pepper and salt and serve it.

PLUM PUDDING.—In the best plum pudding beef marrow is used, not suet. Remove the strings from three-quarters of a pound of the nicest beef's marrow, and chop it fine, adding a teaspoonful of salt; add also a pound of Malaga raisins, a pound of Sultanias and a pound of currants, with three-quarters of a pound of fine-grated breadcrumbs. Mix together half a teaspoonful each of allspice, ground cloves and cinnamon, and half a grated nutmeg, and add to the pudding. Mix thoroughly all these dry ingredients, grate in the yellow peel of a lemon, and add two ounces each of candied citron, orange and lemon peel cut in thin slices, and a quarter of a pound of granulated sugar. Add, finally, ten eggs, half a gill each of rum and brandy, and a gill of sherry. Mix the pudding, and if it is too stiff add a little hot milk, if too thin a few more breadcrumbs. A quarter of a pound of sweet almonds, blanched and chopped fine, are sometimes added. When the spices are omitted a teaspoonful of bitter almonds is added for seasoning.

Hints to Housekeepers.

The saucer of preserves left over from yesterday's luncheon may be added to a little whipped cream, slightly thickened with gelatine, and used for today's dessert.

Whites of eggs, saved one or two at a time, kept in a cool place, may be used for angels' food, cornstarch cake, white layer cake, apple snow, or added to the various fruit sponges.

The don'ts for laundering white silk handkerchiefs are: Don't iron while wet, with a very hot iron, or the silk will shrivel and spoil; don't fail to rinse the soap thoroughly out of them, or they will be coarse and hard; don't rub the soap directly upon them, or wash them in hot water, or they will become yellow to a certainty.

When flatirons become rough or soiled, place a little fine salt on a paper and rub them back and forth over it. Put a little beeswax between two pieces of cloth and keep near the ironing table. If the irons get coated with scorched starch, rubbing them over the cloth will usually remove it. When ironing starched goods, rub the irons over a bit of sandpaper before returning them to the stove.

There is a right chimney for every lamp. The Index gives you its Number.

Your dealer should have it.

Write Macbeth Pittsburgh Pa

Gives Perfect Satisfaction.

Granite State Evaporator Co. Sweetser, Ind., June 14, 1897.

Gentlemen:—The Granite State Feed Cooker and Water Heater which I purchased of you some time ago is giving perfect satisfaction. Very little fuel is required and a large amount of heat is produced. Every stock-raiser should own one. In my opinion, it is the best made.

Yours truly, ROBERT SHERON.

25 gallon, \$12; 50 gallon, \$17; 100 gallon, \$24.

GRANITE STATE EVAPORATOR CO., 6 Temple Court, N.Y. City



On the Yukon River and at Fort Yukon.

Accompanying the party which left San Francisco July 28th, '97, on the Portland, en route for Dawson City, N. W. T., was Max Newberry, special artist for the N. Y. Herald. Herewith are reproduced two of his sketches,

On the Klondike.

Augustus J. Bowie of San Francisco left here July 28th, 1897, en route for the Klondike. Mr. Bowie is credited with being paid a fee of \$25,000 by James R. Keene and others of New York City to expert and report on that region. Mr. Bowie writes from Dawson City, under date of October 3rd, describing the raid on the steamer Bella at Circle City on September 25th, when she was boarded and taken possession of by fifty armed men,

feed them with. The police won't arrest them, because they haven't any food with which to feed them. Everything is frozen except the whisky, and there seems to be an unlimited supply of that article at 50 cents a drink, or \$10 per bottle. Champagne is \$36 per bottle, and I suppose other beverages are at corresponding figures. Five-cent cigars cost 50 cents each, and flour, outside of the company's contracts, \$125 for a fifty-pound sack; candles, \$1 apiece. Seventy-five dollars is paid for a five-gallon can of coal oil. In

to burn. There is absolutely no place to go. There will be no more steamers here until next July. The people are still coming over the trail without provisions. The police here are driving every one down the river as he arrives, and the companies will assist in pushing out of town all persons who are not supplied with food. To lose our supplies at this stage of affairs in Dawson would simply mean death. Money can't buy food, and the actual staple of life, flour, is unobtainable." At the date of writing Mr. Bowie contemplated return at the earliest opportunity.



MINERS BOATING DOWN THE YUKON.

one of two miners journeying down the Yukon. The two portrayed went in by way of Skaguay over the Chilcoot pass, thence to the chain of lakes and across by boat to the Hootalinqua, thence down the river 400 miles to the Klondike.

The other picture portrays an over-

who demanded all her stores and supplies for the starving people at Circle City, about 188 miners. There were thirty passengers on board, including Captain Ray, U. S. A., who addressed the men, but without success. They took thirty tons of provisions. Mr. Bowie says when the steamer arrived at Fort Cudaby "rumors came thick and fast about starvation in Dawson City and the terrible condition of affairs throughout the country.

fact, none is for sale. Sugar is 30 cents and tea \$1 a pound; coffee, \$1 a pound, and not fit for dogs. Ordinary dog meat, which means dried fish, \$1 a pound. No man works for less than \$15 for nine hours, and confers a very great favor upon you even at that rate. Cordwood, sawed and split, is \$50 a cord in the yard. Can't say what it will be before this winter is over. Cooking stoves are not to be had for love or money. Some sheet iron ones



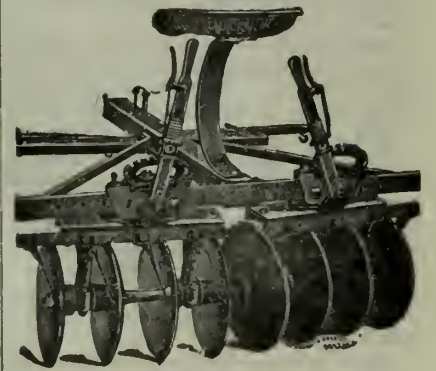
KLONDIKERS ARRIVING AT FORT YUKON.

land scene, a party of Klondikers arriving at Fort Yukon. The dogs are preceded by a man on snowshoes, who makes a trail in which the animals walk. Dogs will not pull a sled unless they have a trail. They are kept in line by another man in front of the sled, who steers by means of a gee-stick. This man also does a good part of the pulling.

Moran Bros. of Seattle, Wash., have a contract from an Eastern "Yukon Co." to build ten steamers and twenty-four barges for \$1,000,000.

The ice was forming rapidly in the Yukon, and it looked as though the steamer would be unable to face the floating masses as they came down the stream. September 30th, although partially frozen in, the steamer started for Dawson City, fifty-three miles away, where she arrived at half-past 5 o'clock that evening. A more God-forsaken place you never saw. The town lies on a flat on the east side of the river, immediately back of which are hills about 500 feet high. The river is about three-eighths of a mile wide, and is, I should judge, quite deep. The elevation above sea level is approximately 1000 feet. Where the town is located must have been an old moose swamp. During the summer time it is undoubtedly a regular quagmire. There are fully 500 loafers in town, who won't work and expect to be fed, and there is no food to

can be obtained at a cost ranging from \$75 to \$100. There is one tinner in town working five men, and his orders are thirty days ahead. Sawed lumber of the poorest quality sells, when you can get it, for \$160 for 1000 feet, and flooring is 20 cents a foot. The restaurants are all closed because they cannot buy supplies; bakeries closed because there is no flour to be obtained. There is no hotel and there are no lodging houses. What in the world these people are going to do before the season is over I cannot say. Every building on the main street is either a saloon with a gambling outfit or a dance house. There are only two stores, which belong to the companies, respectively, the Alaska Commercial Company and the North American Transportation and Trading Company. They close at 5 o'clock, because they have no candles or oil



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The Parlin & Orendorff Company, Canton, Ill.

History of the Business Founded by Wm. Parlin in 1842.

In Canton, Ill., is located the oldest permanent steel plow factory in the United States, and so far as the writer knows the oldest permanent agricultural implement factory in the West. It was established in 1842 by the late Wm. Parlin, who was a thorough blacksmith, having served a regular apprenticeship in the East, and who had the requisite energy and ability to rise in his calling and become a leader in the West in the manufacture of a general line of agricultural implements.

Wm. Parlin came to Canton in 1840 from Massachusetts, after having worked at his

sary to get material from and finished goods to the Illinois river, ten miles away.

"Selling goods at that time was quite a different process from what it is to-day," said Mr. Orendorff a few years ago to a newspaper man who was interviewing him. "I used to load up a platform wagon built for that purpose and drive out to the principal towns seeking customers, until my plows were either sold or consigned to country merchants, when I would return to Canton, catch up with my books and office work and do the same thing over again. As our facilities were increased we had to go farther away to sell our plows. We then took them to pieces and loaded them into wagons and drove into far-off territory. Upon one trip with three wagon loads I remember driving for some days without much success. Stopping one evening at a tavern, I noticed a stranger with his feet resting against a jamb of the fireplace, and

tory enlarged until the company now employs from 600 to 800 men. The force, together with improved machinery, gives the Parlin & Orendorff Company almost unlimited capacity in this particular line.

Messrs. Hooker & Co., the well-known dealers in agricultural machinery, Nos. 16 and 18 Drumm street, San Francisco, are sole agents of the Parlin & Orendorff Co. for the Pacific coast.

Coast Industrial Notes.

—California built more miles of railroad (210) in '97 than any other State in the Union.

—The United States increased its export business to Mexico over 12 per cent during the last fiscal year, showing that American goods are satisfying the Mexican trade. American exporters now supply over 50 per



trade one year in St. Louis, Mo., arriving at Canton with only 25 cents working capital and his tools, but with a determination to earn his way to success. He had reached Canton by way of the Mississippi and Illinois rivers, walking ten miles from the nearest landing to the village. July 4 of that year he established a blacksmith shop and began doing the local work incident to his trade. The first article that he made was a "fro" for splitting lath from oak timber for building purposes. From this his patronage grew, and during his leisure time he began to make plows. The first that he turned out had wooden mouldboards with steel shares cut from old saws, but "boiler plate" was also used for the mouldboards of some of his plows, and the first year, 1842, several were made with steel mouldboards and landslides. These proved so welcome to the farmers that he

after learning with what we were loaded he opened up the conversation by asking me what I was going to do with those plows. Upon telling him my purpose he said: 'Better take them over to my place and I will sell them for you. My place is at Knoxville, Ia.' A few days later it began raining and the roads, never good, were abominable. We drove to Knoxville, however, found Mr. Cunningham to be all right, left three loads or nearly 100 plows with him and returned home. The next spring he sold them all and paid the cash.

"We also found markets for our produce by shipping them up and down the Illinois, Mississippi and Missouri rivers by boat, I frequently going along, selling or consigning a few of them at the different towns as the boats discharged or loaded other freight, until all were disposed of. In the spring of 1855 I

cent of all that Mexico imports, and '98 will see this percentage increased.

—The Robertson Raft Company has a contract for 1,000,000 feet of piling, to be made into a raft at Stella, Wash., on the Columbia river and towed to San Francisco.

—Sulphur deposits owned by the Mexican Sulphur Company on the Colorado river below Yuma, Arizona, are to be developed, and a railroad is to be constructed from the mines to the Colorado river. According to the Yuma Sun, as soon as the shipment of sulphur in large quantities begins the company will charter ocean steamers and ship by the gulf route.

—The Mexican government appears to be reaching for the control of its Pacific coastwise traffic, which at present is wholly in the hands of the owners of the several American steamship lines that ply between San Francisco and Panama. The object embraces the construction of a port at San Jorge, at the head of the Gulf of California, and the building thence of a railroad ninety-six miles in length to Yuma, Arizona, here making connection with the Southern Pacific. Only eighteen miles of the road would be within the United States.

—An agreement has been signed by President Asana of the Japanese Steamship Company, Toyo Kaisha, and S. P. Schwerin, representing the Pacific Mail and the Occidental and Oriental Companies. An agreement has been entered into by the steamship lines named whereby the steamers of the Toyo Kissen Kaisha Line will be put on between Yokohama and San Francisco early in 1898. President Asana was in San Francisco not long ago in the interest of his company. When he returned to Japan there was considerable doubt as to whether he would have his steamships touch the port of San Francisco. This sets the matter at rest and insures for this city a more frequent service between San Francisco and the Orient.

—The output of California salmon fisheries this year is 17,695,000 salmon. In the State hatcheries are 24,000,000 salmon eggs that will be hatched and liberated in 1898. The effect of the salmon laws is clearly marked by the collection of salmon eggs at the egg collecting stations on the headwaters of the Sacramento river. At the Baird station 9,000,000 eggs were collected. At the Battle Creek station 48,000,000 have been collected. Last year the total collection of salmon eggs at all the stations on the coast produced 37,000,000. Under wise legislation—approved by fishermen and canners alike—and propagation, the output of salmon taken from the Sacramento river is rapidly increasing—the only river on the coast that shows an increase year after year for the past six years.

\$100 Reward, \$100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials.

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Hall's Family Pills are the best.

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A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Hemorrhoids from Horses and Cattle. SUPERSEDES A CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

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A \$1 RAISIN SEEDER FOR 50 CTS. Post-paid.

We are tired of selling dealers and waiting 90 days for our money, so we will sell housekeepers at Jobbers' prices. Send 50 cents, and we will mail you postpaid one of our best

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Guaranteed to seed 1 lb. of raisins in 5 minutes. Simple to operate and easy to clean.

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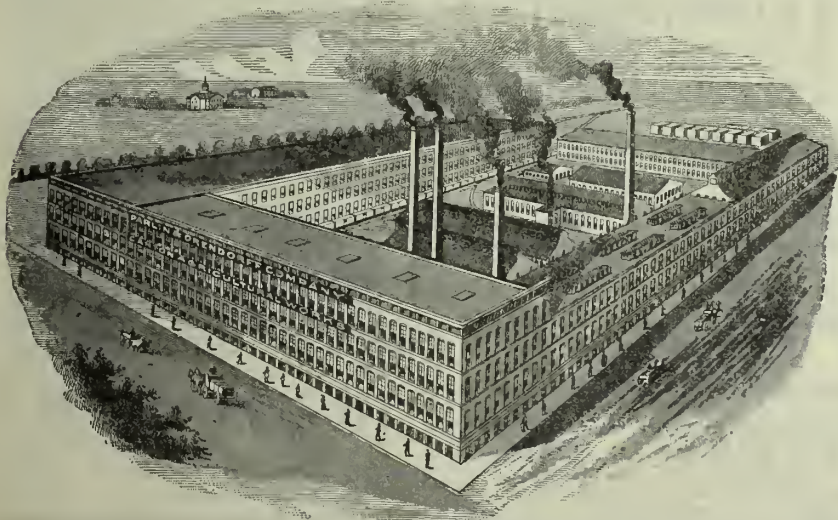
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Present Plant of the Parlin & Orendorff Company, Canton, Ohio.

found it necessary to employ extra help in turning out plows, and the original shop, a small, rude building, was enlarged again and again, until in 1846 a small foundry was added.

In the winter of 1847-48, however, his entire plant was swept away by fire and he found it necessary to begin again in a small way. His first brick building was erected on the site of the present workings in 1849, a 20 x 60 structure, one-story high, and Mr. Parlin's facilities for manufacturing were thus considerably increased.

The business was conducted by Mr. Parlin alone until Jan. 1, 1852, when Wm. J. Orendorff joined resources with him, under the firm name of Wm. Parlin & Co., and preparations were made for still further enlarging the business. The horsepower that had been used for running their grindstones and other machinery was discarded and a steam power employed. About this time the Clipper style of plows was designed and introduced, bringing before the farmers of the West an implement that still stands among the leaders after a lapse of over forty years. But as their output increased the new firm found it uphill work, their business extending beyond the limits they had hitherto worked. Transportation facilities were poor, as it was neces-

sary to get material from and finished goods to the Illinois river, ten miles away. "Selling goods at that time was quite a different process from what it is to-day," said Mr. Orendorff a few years ago to a newspaper man who was interviewing him. "I used to load up a platform wagon built for that purpose and drive out to the principal towns seeking customers, until my plows were either sold or consigned to country merchants, when I would return to Canton, catch up with my books and office work and do the same thing over again. As our facilities were increased we had to go farther away to sell our plows. We then took them to pieces and loaded them into wagons and drove into far-off territory. Upon one trip with three wagon loads I remember driving for some days without much success. Stopping one evening at a tavern, I noticed a stranger with his feet resting against a jamb of the fireplace, and

went with a cargo down the Illinois river to St. Louis, and up the Missouri as far as Kansas City, then little more than a landing, and there established a trade in that country that has had a satisfactory and continuous growth, extending all over the great Southwest and West to the Pacific coast." This energetic work in the introduction of their plows led to further enlargements of the shops, and they began the manufacture of other agricultural implements than plows, beginning with walking cultivators and shovel plows in 1856, stalk cutters in 1857, and other implements as the necessity arose or favorable opportunities presented themselves. In 1865 their first riding cultivator was put on the market. The following year their foundry was enlarged and additions were made to other parts of the works. The first lister ever manufactured for the trade was built by Parlin & Orendorff at Canton. It was the invention of a Missouri blacksmith, who succeeded in interesting this firm in the new method of planting corn in the West. So great was its popularity that during the first year the listers were sent out as soon as finished, some by express and before the paint had dried.

As the years have rolled on the demand for the Canton goods has increased and the fac-



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Registered Berkshires and Poland Chinas from prize winners ready to ship.

P. H. MURPHY, Perkins, Sacramento Co., Cal.

Professor Frank Soule of the civil engineering department of the Berkeley, Cal., University has completed a series of tests undertaken to ascertain the strength of California marble. He found that the product of this State compares very favorably with the best in the country. The strongest found in California was from Mount Slover, San Bernardino county. A 3 inch cube of marble sent by George A. Moore from quarries near Colton, San Bernardino county, was placed between the steel pistons of a rock-testing machine and subjected to a pressure of 118,800 pounds, at which point it crumbled. This shows that the marble can resist a pressure of 13,200 pounds to the square inch. A second cube of Colton marble crumbled at 9350 pounds pressure to the square inch. The most remarkable marble tested was a cube of white dolomite from the Inyo quarries, from which it is proposed to build the San Francisco post-office. The rock did not crumble until a pressure of 30,500 pounds to the square inch was exerted. Scarcely anywhere else in the world is marble of such strength to be found. Its great density makes it proof against fire, frost and water. "The University of California is anxious to assist new industries," said Prof. Soule. "Any one who contemplates opening a new quarry can have the rock tested free of charge if he will send six dressed cubes of the rock, three inches on the edge, to my care, freight charges prepaid. The university asks a fee sufficient to cover expenses if the enterprise is already commercially established. We are now experimenting on the strength of rocks, piles, structural iron and other building materials."

The Peruvian Government has decided to establish a permanent exposition for all classes of manufactured articles in the lines of machinery, giving preference to such as are mostly used in Peru, viz., agricultural implements, mining machinery, electrical appliances of every description, and apparatus for labor-saving machinery. This is done as a means to increase trade in the machinery and kindred lines with manufacturing countries. The Peruvian Government has never before given such inducements to foster trade, and the facilities offered to American manufacturers are advantageous. The exposition was opened on the 9th inst., at Lima. All exhibits are exempt from custom house duties as well as from consular fees. Exhibitors will have the option to show their wares for a period of six months; should longer time be required, arrangements may be made by applying to the officials in charge. The Bureau reports the recent discovery of gold fields in the eastern part of Peru, which are richer than any hitherto found in that country, already noted for its wealth in precious metals. The Departments of Cuzco and Puno, in which are located the fields, are reached by railroad from the Pacific port of Mollendo. A railroad is already in operation from that point to the Department of Puno. At present the journey from Puno to Cuzco is made on muleback, but it is stated a projected line will shortly complete the railroad connection.

A gentleman who has recently made some minute inquiries into the life of the coolie classes of Japan has furnished to the *Osaka Mainichi* the results of his investigations of the earnings and expenses of 100 laborers and their families. He finds that the average daily expenses per family amount to 46.8 sen (about 23 cents), made up as follows: House rent, 5.5 sen; rice, 24.5; other food, 5.5; firewood and charcoal, 2.7; clothes and utensils, 2.6; bath, 2.0; sundry expenses, 4.0; total daily expenses, 46.8 sen. The average earnings of the head of a family are 10.50 yen (\$5.25) per month, or 35 sen (17½ cents) per day. This would show that the family expenses exceed the earnings of the man by 11.8 sen per day; but this investigator found that other members of the family earn an average of 18.8 sen per day, giving a total of nearly 54 sen per day. This leaves a margin of about 7 sen, or 3½ cents, per day to cover any other expenses.

There are at present in San Francisco 15,000 bales of cotton awaiting shipment to Japan. During the season of 1896-'97, closing October 31, 1897, the S. P. Co. brought out here and shipped to the Orient 37,000 bales of cotton. From November 1 to the present time they have brought from the Southern States, chiefly from Texas, to San Francisco 30,550 bales, part of which is still to be shipped. There is also an equal increase in the volume of cotton shipments by way of Portland and Seattle. At those places, too, there are large quantities of cotton waiting to be transported to Japan.

Last week there were shipped from Pleasanton, Cal., eighteen carloads, 1306 bales of hops, the last shipment of this season's crop from the hop yards of that place. The total harvest there was 2400 bales, or 475,000 pounds, of cured hops. This entire crop has been sold to a single customer in London. This crop has averaged 1900 pounds to the acre. It has brought within a fraction of 20 cents a pound. The gross figure was \$90,000. The harvesting caused the distribution of \$20,000 to 2000 pickers.

Secy. of War Alger, has ordered 600 reindeer and their drivers from Norway, to take food to Dawson. Better use American and Canadian horses. The sooner the better food is got in there, and now is no time to begin making fanciful experiments with reindeer. They will cost \$80 each landed at the foot of the Dalton trail.

"BROWN'S BRONCHIAL TROCHES" are unequalled for clearing the voice. Public speakers and singers the world over use them.

Engineer Storey says that the Valley road will reach the Kern river by Jan. 1, '98.

Wire Fencing.—Adapts itself to any ground. Catalogue free. DeKalb Fence Co., DeKalb, Ill.

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**300 HEAD OF
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Bred from the most noted herds in England and the United States.

Awarded at California State Fair 42 individual, special and sweepstakes in 1896, aggregating in cash premiums \$601.50.

At State Fair held at Sacramento in 1897 received Gold Medal Sweepstakes for herds and every premium given to Hereford cattle.

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RENO, NEVADA.

Always in the Lead!

In the face of the strongest competition ever known at a California State Fair our swine herd again carried off the majority of the premiums. Why? Because we have the best pigs in the State. Choice pigs from prize winners ready to ship at reasonable prices. Write for Catalogue and Prices.

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Cooper's Sheep Dipping Powder.

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December 1st, 1897.

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\$50 IN A LUMP



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OINTMENT**

will remove all lumps and hunches permanently without leaving a scar. For sale at all drug stores at \$1.50 pkg. Smaller size 50c.

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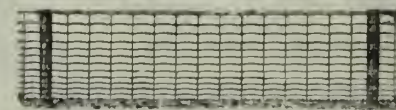
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As Well as for Other Kinds of Stock, in Connection with Oil Cake.

(See Analysts in Cal. Dairy Ass'n Report for 1896.)

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Hot Water.



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On trial \$5.75 up—My 100 egg Buckeye hatched 106 103 and 96 chicks from 112, 105 and 96 eggs respectively.
Mrs. Eliza J. Prince, 16 Acres, Mass. Send 4c for No. 99 catalogue.
Buckeye Incubator Co., Springfield, O.

S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, December 29, 1897.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | Dec. | May. |
|----------------|--------------|--------------|
| Wednesday..... | \$ 99½ @ 98½ | \$ 93½ @ 92½ |
| Thursday..... | 98½ @ 99½ | 93½ @ 93½ |
| Friday..... | 99½ @ 98½ | 94½ @ 94½ |
| Saturday..... | — @ — | — @ — |
| Monday..... | 97½ @ 99 | 93½ @ 94½ |
| Tuesday..... | 1 00¼ @ 97½ | 94½ @ 93½ |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | Dec. | May. |
|----------------|-------|-------|
| Wednesday..... | 7s5½d | 7s3½d |
| Thursday..... | 7s6 d | 7s4½d |
| Friday..... | — | — |
| Saturday..... | — | — |
| Monday..... | — | — |
| Tuesday..... | 7s6½d | 7s4½d |

*Holiday.

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | Dec. | May. |
|----------------|----------------|----------------|
| Thursday..... | — @ — | \$1 39¼ @ 1 39 |
| Friday..... | \$1 44½ @ 1 45 | 1 39½ @ 1 40 |
| Saturday..... | — @ — | — @ — |
| Monday..... | — @ — | 1 40¼ @ 1 41½ |
| Tuesday..... | 1 46¼ @ 1 46 | 1 41¼ @ 1 42 |
| Wednesday..... | 1 46¼ @ 1 45½ | 1 41½ @ 1 40½ |

Wheat.

Although business in spot wheat has been of a light order since last review, the market in the main has shown a healthy tone. There was a quotable advance of fully 2½¢ per cental on milling wheat, and about the same on shipping grades. Exporters made very little inquiry, partly due to almost general suspension of business in England on account of Christmas, the festivities there extending over three or four days. Call Board values here recorded an improvement of about 3c, being shared almost equally by both December and May. On Wednesday, the date of going to press, Chicago market broke, December dropping about 4c, per hushel and May about 2½c. Liverpool options at same time were about ½d per cental lower. There was a fractional decline in December wheat and a drop of about 2c in May. Spot values, however, remained steady, with offerings light. Five wheat cargoes have cleared from this port since last review, four being for Europe and one for South Africa. One of the ships for Europe took 5500 tons, the value being \$170,000.

The local wheat market continues to be heavily handicapped by the very limited supply of deep sea ships suitable for grain loading. There is a fair-sized fleet now due, however, which with favorable winds is likely to sail into port very speedily. A bark arrived this week which was nearly eight months on the way to this port from London via Cape of Good Hope. This vessel had been given up as lost by both owners and consignees. The supply of ships headed this way and now in port disengaged represents a carrying capacity in wheat of about 260,000 tons. A year ago the ships here seeking engagement and those on the way were sufficient to carry a little over 400,000 tons of grain. Ocean freights to Europe a year ago were not to exceed \$5 per ton, as against about \$8 per ton at this date. If wheat was receiving the benefit of this difference, there would be now a fairly satisfactory market for this cereal. An addition of 15c per cental to the present price would net a very snug sum on the stocks now remaining. The visible supply in the State, according to latest returns, is about 400,000 tons. On this quantity a difference of \$3 per ton for or against the producer means \$1,200,000. It is not to be supposed, of course, that conditions will remain exactly as they now are until the close of the season. Prospects are just as favorable for the freight market ruling easier as they are for freights going higher or remaining at current levels. On the other hand, it is generally expected that wheat values abroad will decline to some extent during the next five or six months. The weakness, however, may not develop according to expectations. Much will depend on the outlook from time to time for the coming crop. Should wheat values be reduced mate-

rially abroad, it is more than probable that in this center freights rather than wheat will have to bear most of the loss.

| | |
|-------------------------------------|-----------------|
| California Milling..... | \$1 42½ @ 1 47½ |
| Cal. No. 1 shipping, alongside..... | 1 42½ @ — |
| Oregon Valley..... | 1 42½ @ 1 43½ |
| Walla Walla Blue Stem..... | 1 40 @ 1 47½ |
| Walla Walla Club..... | 1 35 @ 1 42½ |

CALL BOARD PRICES.

On San Francisco Call Board prices for No 1 white wheat per cental for the week were as follows for the options named:

December, 1897, delivery, \$1.46½ @ 1.45½.
May, 1898, delivery, \$1.39 @ 1.42.
Wednesday, at regular noon session of Call Board, December wheat sold at \$1.46¼ @ 1.45¾;
May, 1898, 1.41½ @ 1.40½.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|----------------|----------------|
| Liv. quotations..... | 7s1d @ 7s2d | 8s3d @ 8s4½d |
| Freight rates..... | 17½ @ 20s | 33 @ 35s |
| Local market..... | \$1.47½ @ 1.55 | \$1.42½ @ 1.45 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

Business in both the wholesale and jobbing markets has been light since last review, as is customary during the midwinter holiday period. Although there are no heavy spot supplies, the market is easy in tone, sales at full current figures being confined almost wholly to a few well-known brands in high favor with consumers.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | \$3 00 @ 3 25 |
| Superfine, good to choice..... | 3 35 @ 3 60 |
| Country grades, extras..... | 4 00 @ 4 25 |
| Choice and extra choice..... | 4 25 @ 4 50 |
| Fancy brands, jobbing..... | 4 50 @ 4 65 |
| Oregon, Bakers' extra..... | 3 90 @ 4 25 |
| Walla Walla, Bakers' extra..... | 3 90 @ 4 25 |

Barley.

Values remain quotably about as last noted. There has been no great amount of activity in the market for this cereal the past week, but fully as much business was transacted as could be expected, considering the holiday observances. Choice to select barley was not urged to sale in large quantity, either Brewing or Feed. Dark, foul or otherwise seriously defective stock had to go at tolerably low figures to meet with prompt custom. Trading in options was of a still slower order than business in the sample or open market.

| | |
|---------------------------------|------------|
| Feed, No. 1 to choice..... | 87½ @ 90 |
| Feed, fair to good..... | 85 @ 87½ |
| Brewing, No. 1 to choice..... | 95 @ 1 02½ |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

December, 1897, delivery, — @ —c.
May, 1898, delivery, 83¼ @ 86c.
Wednesday at regular noon session of the Call Board May, 1898, feed sold at 84½c.

Oats.

The market is liberally stocked with White and Surprise oats, both Feed and Milling. Prices remain virtually the same as for a fortnight or more past, with demand light, buyers in most instances operating only as their necessities compel them to, and then refusing to purchase to any noteworthy extent against future needs. Gray oats are in limited stock, and occasional sales are made at an advance on quotable rates. Black and Red oats of select quality are held at rather stiff figures, but not many are required to satisfy the demand at the prices asked.

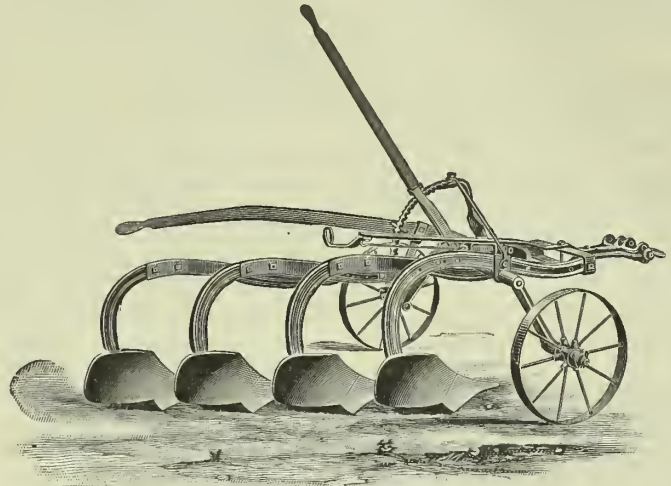
| | |
|-------------------------------|---------------|
| White Oats, fancy feed..... | 1 15 @ 1 17½ |
| White, good to choice..... | 1 07½ @ 1 12½ |
| White, poor to fair..... | 1 00 @ 1 05 |
| Gray, common to choice..... | 1 10 @ 1 20 |
| Milling..... | 1 07½ @ 1 12½ |
| Surprise, good to choice..... | 1 15 @ 1 20 |
| Black Russian..... | 1 15 @ 1 50 |
| Red..... | 1 10 @ 1 40 |

Corn.

Offerings were a little more liberal, perhaps, than during preceding week, but market was no more favorable to buyers than last quoted. Large Yellow received the most attention, as has been the case for some weeks past. At the same time, Small Yellow was in moderate favor, mostly on local account. For Large White there was no inquiry worth mentioning, but this variety is likely to meet with considerable shipping demand later in the season.

| | |
|----------------------------------|-------------|
| Large White, good to choice..... | 90 @ 95 |
| Large Yellow..... | 97½ @ 1 02½ |
| Small Yellow..... | 97½ @ 1 02½ |
| Eastern Yellow..... | — @ — |
| Egyptian White..... | — @ — |
| Popcorn, shelled, ¾ lb..... | — @ — |

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Are the very best made. Their construction is such that thorough cultivation is made an easy and comfortable task. The BONANZA JUNIOR GANG is especially designed for the larger orchards and vineyards. It is made with three or four 8 inch full steel bottoms, and can be used with either three or four horses. The quality of work done by these plows is unexcelled, and by using one of them one man will do the work of three or four, thus reducing the cost of cultivation to the minimum.

In hand plows the Oliver Nos. A. B. K. M. 8 and 10 Vineyard and Orchard patterns are so well and favorably known that a detailed description of their many good points is unnecessary.

A neatly illustrated catalogue of these goods will be mailed to you promptly on application. Address

OLIVER CHILLED PLOW WORKS,

13 and 15
Main Street,
SAN FRANCISCO,
CALIFORNIA.

Rye.

There is no change for the better observable, spot supplies continuing more than ample for immediate requirements.

Good to choice, new..... 97½ @ 1 02½

Buckwheat.

Supplies in this center are for the time being of light volume, and are fairly well concentrated. Values are quotably higher than last noted, with market quite firm.

| | |
|---------------------|-------------|
| Good to choice..... | 1 40 @ 1 45 |
| Silverskin..... | 1 45 @ 1 50 |

Beans.

Firmness is about as prominent a feature of the market as for a fortnight or more past. The strength is more the result of light receipts and of extreme cautiousness on the part of most sellers than of any extensive demand, either for shipment or for local use. The recent sharp advances, mainly in prices of Bayos and Pinks, have caused holders to be timid about letting go, lest values might move further upward, and present sellers would not receive the full benefit of the improvement. The appreciated prices for Bayos and Pinks are especially the result of speculative operations, and whether warranted or not will be demonstrated in the next few months. Although values for most other beans have been hardening, they are still on a comparatively low plane, and need give owners no uneasiness about being higher than

can be sustained. Limas have been ruling slightly firmer lately, due mainly to some of the heaviest holders advancing asking rates, deeming the time auspicious for such procedure.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 25 @ 1 35 |
| Small White, good to choice..... | 1 30 @ 1 40 |
| Lady Washington..... | 1 30 @ 1 40 |
| Butter, small..... | 1 25 @ 1 40 |
| Butter, large..... | 1 50 @ 1 60 |
| Pinks..... | 1 70 @ 1 80 |
| Bayos, good to choice..... | 2 90 @ 3 00 |
| Reds..... | 2 00 @ 2 25 |
| Red Kidneys..... | 2 00 @ 2 25 |
| Limas, good to choice..... | 1 60 @ 1 70 |
| Black-eye Beans..... | 2 25 @ 2 50 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

The bean market on the Atlantic side is outlined as follows by a New York contemporary of recent date, prices quoted in the same being per 60-lb. bushel:

In white beans there has seemed to be almost a cessation of business. Exporters have shown scarcely any interest, and the jobbing trade has been confined to the few buyers who were forced to replenish stock. These conditions are quite natural at this season, however, and there is quite general expectation of dullness until after the turn of the year. The accumulations of stock at the receiving depots have been added to this week, and repeated notices to move the beans have forced a little pressure to sell, and some concessions in price in consequence. Marrow have settled gradually to about \$1.35, that figure being accepted at the close for some of the choicest lots. Medium are down to \$1.20, and Pea to \$1.15 for best marks, with the latter variety showing most weakness. Nearly all the receivers were anxious to sell Red Kidney, as there have been larger supplies coming forward of late, and when it was ascertained that the export orders would probably be light there was quite a sharp cut in the price; probably the

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bulk of the shipping business was done at about \$1.65, but less has been accepted for some choice lots toward the close. White Kidney declined to \$1.35@1.40, with only the fanciest stock in shipping order reaching the outside figure. An absence of export demand for Turtle Soup has caused pressure to sell and a decline of 10¢@15¢; would now be difficult to exceed \$1.50. Yellow Eye neglected. Stronger advices from the Pacific Coast have made a firmer holding of Lima, and most of the recent sales of prime new stock have been at \$1.30. Green peas very slow.

Dried Peas.

Business is of small volume, but where transfers are effected, it is the exception where full current figures are not realized. Choice qualities can be readily placed, but poor stock receives little attention, and if very inferior, fails to command lowest prices below quoted.

Green Peas, California.....\$1 60 @1 75
Niles Peas.....1 35 @1 45

Hops.

The recent reduction in stocks has imparted a slightly better tone to the market. Most of the hops on this coast have passed into second hands, and this naturally causes dealers to be more exacting in the matter of values than when supplies were more widely scattered. The course of the market during the next few months will depend much on how the roots winter, both in this country and in Europe.

Good to choice, 1897 crop.....11 @14

Recent mail advices furnish the following New York review of the hop market:

Pretty satisfactory trading has been in progress all the week, and the market has gained in strength, though actual selling values have not changed sufficiently to affect quotations. Brewers have shown considerably more interest, and their purchases were of such character and magnitude as to indicate a feeling that it would be unwise to longer delay securing supplies. Exporters have made occasional purchases here, but have not found as good an assortment of stock as was to be had in the interior, and most of their orders have gone direct to the country. Between dealers the transactions have been comparatively small. The present firmness is not confined to the fine shipping grades as was the case some time ago, but there is a stronger feeling on the medium and low grades as well. It is, perhaps, a little easier to reach outside quotations. Considerable activity has been reported in the country and the sales show a better range of values—from 12¢ to 17¢, with a larger part of the business at 15¢@16¢ for desirable lots. London cables received within a day or two report much freer buying and firmer prices. A sale of 1000 bales Pacifics was recently made at a price equal to 18¢ f. o. b. here. A demand is also developing for yearlings. Germany does not seem to have any hops to spare.

Wool.

The general tone of the market is unchanged, but values are wholly nominal at present, owing to an entire absence of business. No noteworthy revival of trade is looked for before the middle or latter part of January. There is a considerable quantity of wool remaining, both in the scoured state and in the grease. The relief is entertained by many holders that when the spring season opens there will be a lively and firm market.

SPRING.

Oregon Valley.....17 @18
Oregon Eastern, choice.....13 @15
Oregon Eastern, fair to good.....10 @12

FALL.

Middle County, free.....10 @13
Do defective.....9 @11
Northern, free.....11 @14
Do defective.....10 @11
Southern Mountain.....9 @12
Lamb's free.....10 @11
Lamb's defective.....6 1/2 @8
San Joaquin defective.....7 @8 1/2

Millstuffs.

Bran was in increased supply, causing the market to be a little easier. Middlings were offered at old figures. Values for rolled barley and milled corn showed steadiness.

Bran, 1/2 ton.....17 50 @18 50
Middlings.....19 00 @22 00
Barley, Rolled.....19 00 @20 00
Cornmeal.....22 00 @22 50
Cracked Corn.....23 00 @23 50

Hay and Straw.

The improved condition developed in the hay market just prior to last review has continued in force up to present writing. As stocks are light, both here and in the interior, it will be surprising if there is any special weakness experienced during the balance of the season. Straw remains without quotable change, offerings proving steadily more than ample for present requirements.

Wheat.....11 00 @14 50
Wheat and Oat.....10 00 @13 50
Oat.....10 00 @12 50
Barley.....8 00 @11 00
Clover.....7 50 @9 50
Stock Hay.....6 00 @7 50
Alfalfa.....8 00 @10 00
Compressed.....10 00 @14 00
Straw, 1/2 bale.....30 @40

Seeds.

Most of the Mustard Seed which has lately come forward has been placed prior arrival. Values remain quotably as before, but are little more than nominal, owing to absence of transactions. The market has a healthy tone. There were fair receipts of Flaxseed this

week, but as arrivals had been previously placed, values were not disturbed. Alfalfa Seed is in limited request and will so continue until there are liberal rains.

Mustard, Yellow.....2 75 @3 00
Mustard, Trieste Seed.....2 75 @3 00
Mustard, Wild Brown.....2 00 @2 25
Flax.....1 65 @1 90

Canary.

Rape.....2 1/4 @2 3/4
Hemp.....2 1/4 @2 3/4
Alfalfa, Utah.....5 1/2 @6

Bags and Bagging.

Inactivity is fully as pronounced in the bag market as previously reported, with poor prospects of there being any activity in this line for several weeks to come, possibly longer. Prices are without quotable change.

Calcutta Grain bags, huyer July.....@—
Calcutta Grain bags, 22x36, spot.....5 1/2 @5 3/4
State Prison bags, per 100.....5 40 @—
Wool sacks, 4 lb.....30 @—
Wool sacks, 3 1/2 lb.....27 @—
Gunnies.....10 @—
Bean bags.....4 1/2 @4 3/4
Fruit sacks, cotton.....5 1/2 @6 1/4

Hides, Pelts and Tallow.

Practically the same conditions prevail in this market as were experienced the preceding week. Hides, pelts and tallow meet with custom at prevailing rates about as rapidly as presented for sale.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

Heavy Steers, over 56 lbs.....10 @10 1/4
Medium Steers, 48 to 56 lbs.....@9 1/4
Light Steers, under 48 lbs.....8 1/4 @9
Heavy Cow Hides, over 50 lbs.....@9
Light Cow Hides, under 50 lbs.....8 1/4 @9
Wet Salted Kip.....@9
Wet Salted Veal.....@9
Wet Salted Calf.....@11
Dry Hides.....15 @15 1/2
Dry Kip and Veal, 11 to 16 lbs.....@14
Dry Calf, under 4 lbs.....@18
Horse Hides, large.....2 00 @2 50
Horse Hides, medium.....1 50 @2 00
Horse Hides, small.....25 @50
Colts' Hides.....80 @100
Pelts, long wool, per skin.....60 @80
Pelts, medium, per skin.....35 @60
Pelts, short wool, per skin.....15 @25
Pelts, shearling, per skin.....@25
Deer Skins, best summer.....@20
Deer Skins, good medium.....@20
Deer Skins, thin winter.....@10
Elk Hides.....8 @10
Tallow, good quality.....3 @3 1/2
Tallow, No. 2.....2 @2 1/2
Goat Skins, perfect.....20 @25
Goat Skins, damaged.....10 @20
Kid Skins.....5 @—

Honey.

There are still fair supplies on the market, but they are mostly amber and dark colored. Only for water white does the market show any firmness. Light amber is in fair request at the rather low prices named by buyers, or figures close to inside quotations. Dark honey is difficult to place, even at low prices.

Extracted, White Liquid.....4 1/2 @4 3/4
Extracted, Light Amber.....3 1/2 @3 3/4
Dark Tule.....1 1/2 @2 1/4
White Comb, 1-lb frames.....7 1/2 @8
Amber Comb.....4 @6

Beeswax.

Offerings of this commodity disappear about as rapidly as presented to buyers. Considerably more than is arriving could be conveniently placed.

Fair to choice, 1/2 lb.....22 @24

Live Stock and Meats.

There was a fair demand for beef, and values were steady at range last quoted. Some extra large and fat heaves commanded an advance on quotations. Mutton was in only moderate receipts, and sold to fair advantage. Fat hogs of large to medium size were in good request on packing account.

Beef, 1st quality, dressed, net 1/2 lb.....6 @6 1/2
Beef, 2d quality.....5 1/2 @6
Beef, 3d quality.....4 1/2 @5
Mutton—ewes, 6@6 1/2; wethers.....6 1/2 @7
Hogs, hard grain fed, medium.....3 1/2 @3 3/4
Hogs, small.....3 1/4 @3 1/2
Hogs, large hard.....3 1/2 @3 3/4
Hogs, soft and feeders.....3 @3 1/2
Hogs, country dressed.....4 1/2 @4 3/4
Veal, small, 1/2 lb.....6 1/2 @7
Veal, large, 1/2 lb.....6 1/2 @7
Lamb, 1/2 lb.....7 @8

Poultry.

Turkeys were in more active request than ordinarily and sold at a tolerably wide range. Owing to a shortage in the supply of Christmas Turkeys as high as 20¢ per lb. was realized for Dressed. Sales of prime Dressed were made Monday of this week at 16¢, owing to very limited demand. Stocks were extremely light, otherwise still lower prices would have ruled. Market Tuesday and Wednesday (latter being date of going to press) was more firm for Turkeys and inclined in favor of sellers. Chickens, Ducks and Geese moved rather slowly, and other than very select young stock went at generally low figures. Fryers and Broilers were scarce and higher. Four cars of Eastern poultry arrived during the week.

Turkeys, dressed, 1/2 lb.....15 @17
Turkeys, live hens, 1/2 lb.....13 @14
Turkeys, live gobblers.....12 1/2 @15
Hens, Cal., 1/2 doz.....3 50 @5 00

Roosters, old.....3 50 @4 00
Roosters, young, (full-grown).....4 00 @5 00
Fryers.....4 50 @5 00
Broilers, large.....4 50 @4 75
Broilers, small.....3 00 @4 00
Ducks, old, 1/2 doz.....3 50 @5 00
Geese, 1/2 pair.....1 50 @2 00
Goslings, 1/2 pair.....1 50 @2 00
Pigeons, Old, 1/2 doz.....1 00 @—
Pigeons Young.....1 25 @1 50

Butter.

A stiff and excited market has been experienced part of the current week. For select creamery as high as 40¢ per lb. was realized in a small way, and some very choice dairy sold up to 37 1/2¢ per lb. Light stocks of both fresh and packed, and an increased demand on account of the holidays, enabled receivers to sharply advance the price temporarily. The market is now easier, however, with demand less urgent and supplies on the increase. As a result of the excited market about five cars of Eastern butter were started this way, some landing here this week.

Creamery extras, 1/2 lb.....35 @36
Creamery firsts.....33 @34
Creamery seconds.....33 @34
Dairy select.....27 1/2 @30
Dairy soft and weedy.....16 @20
Mixed store.....25 @—
Creamery in tubs.....25 @—
Pickled roll.....25 @—
Dairy in tubs.....23 @24
Firkin, Cal., choice to select.....22 @23
Firkin, common to fair.....17 @21

Cheese.

Prices in this market have shown little or no fluctuation since last issue. There are fairly liberal supplies of held cheese, and market for such stock is easy in tone. For a little extra fancy new, full cream and of mild flavor, slightly higher figures than are quotable are realized.

California fancy flat, new.....11 @12
California, good to choice.....10 @11
California, fair to good.....9 @10
California Cheddar.....10 1/2 @11 1/4
California, "Young Americas".....11 @12 1/4

Eggs.

With the demand on holiday account nearly ended, the market has been less favorable to sellers than last quoted. Receivers were anxious to keep stocks cleaned up, and retailers were carrying as light supplies as possible, neither having any confidence in the future of the market. There is generally a demoralized condition of affairs in the egg trade immediately after New Years, no matter how light the stocks are. If the conditions prove otherwise this season, it will be an agreeable surprise.

California, select, large white and fresh.....31 @—
California, select, irregular color & size.....26 @29
California, good to choice store.....24 @26
California, common to fair store.....@—
Oregon, prime.....@—
Held Eastern, as to section and grading.....15 @21
Local Cold storage eggs.....@—

Vegetables.

The onion market has been less active and not quite so firm as last quoted, owing to competition from the East in the evaporated product. Most other vegetables were in light stock and against buyers. Some green Lima beans and summer squash arrived from Los Angeles.

Asparagus, 1/2 lb.....@—
Beans, String, 1/2 lb.....10 @12 1/4
Beans, Lima, 1/2 lb.....@—
Beans, Refugee, 1/2 lb.....@—
Beans, Wax, 1/2 lb.....@—
Cabbage, choice garden, 1/2 100.....50 @—
Cauliflower, 1/2 doz.....65 @75
Corn, Green, 1/2 sack.....@—
Corn, Alameda, 1/2 crate.....@—
Cucumbers, Alameda, 1/2 box.....@—
Egg Plant, 1/2 lb.....15 @20
Garlic, 1/2 lb.....2 1/2 @2 1/4
Mushrooms, Buttons, 1/2 lb.....@—
Mushrooms, Wild, 1/2 lb.....@—
Okra, Dried, 1/2 lb.....12 1/2 @15
Onions, Yellow, good to choice.....2 00 @2 25
Onions, Yellow, cut.....1 25 @1 50
Peas, Sweet, Garden, 1/2 lb.....8 @10
Peppers, Green Chile, 1/2 lb.....7 @8
Rhubarb, 1/2 box.....@—
Squash, Summer, 1/2 lb.....10 @12 1/4
Tomatoes, Bay, 1/2 box.....40 @75
Tomatoes, Los Angeles, 1/2 crate.....1 00 @1 25

Potatoes.

There was no very brisk trade in potatoes, but prices were, in the main, well sustained, especially for desirable qualities of Burbank Seedlings, this being the leading variety. Some fancy sold above figures quoted. Sweets were not in very heavy stock, but there were more than enough for the demand.

Early Rose, River, 1/2 cental.....50 @65
Peerless, River.....@—
Reds, River.....40 @55
Garnet Chile, Mission.....@—
Burbanks, Salinas.....60 @100
Burbanks, River.....50 @75
Burbanks, Petaluma and Tomales.....@—
Burbanks, Oregon.....50 @90
Garnet Chile, Oregon.....@—
Sweet River, 1/2 cental.....40 @50
Sweet Merced.....60 @80

The Fruit Market.

Fresh Fruits.

Seldom has such a quiet market been experienced for fresh fruits at the Christmas period, as during the past week. Continued frosty weather most of the time had much to do with the limited demand. Furthermore, the superabundance of faulty fruit had considerable effect in checking the inquiry from consumers. At no other time than during the holidays are buyers more exacting about the quality of fruit they use. Choice to select apples were not in large supply, and such stock did not lack for custom at previously quoted values, occasional sales of very superior fruit being made at slightly higher figures. Virginia Greenings, large and faultless, were held up to \$2.50 per 4-tier box, while common of the same variety, showing some worm holes, were offered down to \$1 per box. Apples of more ordinary varieties and in-

ferior quality sold as low as 15¢@20¢. Several vessels from southern Oregon, which had been bar-bound for about a fortnight, brought over 4,000 boxes of apples, all in poor condition, and some were so badly decayed as to be practically unsalable. Fine Spitzenberg were quotable up to \$1.25, and choice Newtown Pippins up to \$1 per box. Pears are not making much of a showing, but values remain without quotable improvement. A few Winter Nellis, large, sound and in every way desirable, sell to fair advantage, being quotable up to \$1.25 per box, but for all other varieties the market inclines against sellers, with 50¢ per box an extreme as a quotable rate for ordinary varieties. Grapes continue to be offered in a small way out of cold storage, but they meet with very little attention, the demand being still more insignificant than the supply. At this time of year grapes are used more as an ornament than for food. Few persons crave them in mid-winter, or in cold weather. Japanese persimmons are offering at fully as low if not lower rates than at any previous date this season. Stocks are of fair proportions, and the quality of most of this fruit is now first-class in every respect.

Apples, Spitzenberg, 4-tier, per box.....1 00 @1 25
Apples, choice Newtown Pippin, 4 tier, 1/2 box.....75 @1 00
Apples, good to choice, 50-lb box.....50 @1 00
Apples, common to fair, 1/2 box.....20 @40
Apples, Lady, 50-lb box.....75 @1 25
Apples, Belleflower, 50-lb box.....50 @75
Quinces, 1/2 box.....@—
Figs, Black, 2-layer box.....@—
Grapes, 1/2 crate.....40 @75
Grapes in boxes 5@10¢ less than in crates.....@—
Pears, Common, 1/2 box.....20 @60
Pears, Winter Nellis, 1/2 box.....60 @1 00
Persimmons, small box.....25 @50
Strawberries, large, chest.....@—

Dried Fruits.

There are few changes of moment to record in the market for cured and evaporated fruits since last review. Considering that it is holiday time, between Christmas and New Years, fully as much or more business has been done than there has been substantial reason to expect. Large Prunes were in good request for shipment to Europe. An order for eight carloads of 40 to 50's and 50 to 60's was being filled for Germany. Market was firm for 50-60's at 3 1/2¢, and for 40-50's at 5¢. Small Prunes received no noteworthy attention, and for these the market was weak at former low range of values. Apples continued in light stock and prices tended in favor of sellers. Sliced and evaporated in boxes were held up to 7¢, and for sun-dried sliced of prime quality holders were asking 4 1/2¢. Apricots of good to choice quality were steadily held, with stocks light and good prospects for all being wanted during the next few months. The firm tone previously developed for Pitted Plums continued to be maintained. Peaches have been nearly all closed out from first hands, and market for this fruit is showing a little better tone, but cannot be said to be quotably higher. Stocks of choice fruit of all varieties are not likely to long cumber the market. There may, however, fail to be a speedy clean-up of some of the most ordinary qualities of dried fruits, even at low prices. The last steamer for British Columbia took a carload of assorted fruit.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, per lb.....5 1/2 @6
Apricots, Royal, fancy.....6 1/2 @—
Apricots, Moorpark.....7 @9
Apples, in boxes.....6 1/2 @6 3/4
Figs, fancy pressed.....8 @10
Nectarines, White.....4 1/2 @5
Nectarines, Red.....4 1/2 @5
Peaches, unpeeled, choice.....6 @—
Peaches, unpeeled, fancy.....6 @—
Peaches, peeled, in boxes.....9 @12
Pears, unpeeled Bartlett's, halved, fancy.....7 @8
Pears, halved, unpeeled Bartlett's.....4 1/2 @6
Pears, quartered, unpeeled Bartlett's.....4 @5
Pears, peeled and sliced.....@—
Plums, pitted.....3 1/2 @4 1/4
Prunes, in sacks, 40-50's.....4 1/2 @5
50-60's.....3 @3 1/2
60-70's.....2 1/2 @2 1/4
70-80's.....2 @—
80-90's.....1 1/2 @—
90-100's.....1 1/2 @—
Above figures are on basis of 2¢ for 4 sizes. Prunes in boxes, 1/4¢ higher for 25-lb boxes, 1/2¢ higher for 5-lb boxes.

4 sizes Santa Claras and equal.....2 @—
4 sizes San Joaquin and Northern.....1 1/2 @—
Prunes, Silver.....5 @8

COMMON SUN-DRIED.

Apricots, ordinary.....4 @5 1/4
Apples, sliced.....3 1/2 @4
Apples, quartered.....3 1/2 @4
Figs, Black.....2 @3 1/4
Figs, White.....3 @4
Peaches, unpeeled.....3 @4
Plums, unpitted.....1 @1 1/4

A New York authority, under recent date, reports the condition of the dried fruit market in the East as follows:

Evaporated apples have met a fairly active demand this week and with moderate offerings mar-

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ket has been well sustained at full late prices. Prime wood-dried have generally been held at 8½¢, with wire-dried offered at ¼¢ lower. Sun-dried apples have had a little more attention and have been held with confidence, though outside quotations are extreme. Chops fairly active and steady, but cores and skins are quiet and easy. Raspberries and other small fruits show no new feature. California fruit fairly active.

| | |
|--|---------|
| Apricots, Cal. Moorpark, 1897, per lb..... | 9 @ 11 |
| Apricots, Cal. Royal, 1897, per lb..... | 6 @ 8½ |
| Peaches, Cal., 1897, peeled, per lb..... | 14 @ 18 |
| Peaches, Cal., 1897, unpeeled, per lb..... | 5½ @ 10 |
| Pears, Cal., 1897, per lb..... | 5 @ 10 |
| Prunes, Cal., 1897, per lb..... | 3 @ 8 |

Raisins.

There are no evidences of much business at present, the absence of high-grade Muscatels in wholesale quantity, either boxed or loose, having considerable to do with the prevailing inactivity. Low-grade and rain-damaged goods are still in heavy supply, both here and in Eastern centers, and there is nothing to warrant anticipating any special improvement in the market for raisins of this sort. Sultanas and Seedless Muscatels of prime quality are rather plentiful and are being offered at comparatively low figures.

F. O. B. FRESNO DELIVERY.

| | |
|--------------------------------------|-------------|
| Imperial Clusters, per box..... | @ |
| Dehesa Clusters, per box..... | @ |
| Fancy Clusters, per box..... | @ |
| Boxes, London layers, 20-lb box..... | 1 00 @ 1 10 |

(Usual advance for fractions.)

| | |
|------------------------------------|---------|
| Loose Muscatel, 4-crown, ½ lb..... | 4 @ |
| Loose Muscatel, 3-crown..... | 3¼ @ 3½ |
| Loose Muscatel, 2-crown..... | 2 @ |
| Sultanas..... | 3¼ @ 4 |
| Seedless Muscatel..... | 2 @ 2½ |
| Dried Grapes..... | 1½ @ 2 |

Citrus Fruits.

Orange market has ruled quiet most of the week, but demand was a little more active in the aggregate than during previous fortnight. A few of select quality brought comparatively stiff prices and an advance on quotations, selling more readily at extreme rates than did some common at lowest figures quoted. Lemons were in good supply, and for other than a few select, going to special custom, market was dull and weak. Limes remained favorable to buyers.

| | |
|---------------------------------|-------------|
| Oranges—Navel ½ box..... | 1 25 @ 3 00 |
| Seedlings..... | 75 @ 1 50 |
| Lemons—Cal., select, ½ box..... | 2 00 @ 2 25 |
| Cal., good to choice..... | 1 00 @ 1 50 |
| Cal., common to good..... | 50 @ 1 00 |
| Limes—Mexican, ½ box..... | 2 00 @ 3 00 |
| Cal., small box..... | 50 @ 1 00 |
| Grape fruit, ½ crate..... | 2 50 @ 4 00 |

Nuts.

There is scarcely anything doing in nuts, as is usual after the holiday, demand has been satisfied. Values for Almonds and Walnuts are poorly defined. Cutting of prices to secure custom is the rule rather than the exception.

| | |
|--------------------------------------|--------|
| California Almonds, paper shell..... | 6 @ 6½ |
| California Almonds, soft shell..... | 4 @ |
| California Almonds, hard shell..... | 2 @ 3 |
| Walnuts White, paper shell..... | 6 @ 6½ |
| Walnuts White, soft shell..... | 6 @ 6½ |
| Walnuts White, Cal., standard..... | 5 @ 6 |
| Chestnuts, Cal. Italian..... | 7 @ 8 |
| Peanuts, Cal., fair to prime..... | 4½ @ 5 |
| Peanuts, Eastern hand-picked..... | 5 @ 6 |
| Pine Nuts..... | 7 @ 8 |

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|--------------------|-----------------------|-------------------------|
| Flour, ¼-sks..... | 98,933 | 2,522,692 |
| Wheat, cts..... | 179,775 | 6,924,529 |
| Barley, cts..... | 65,715 | 3,445,793 |
| Oats, cts..... | 16,589 | 387,954 |
| Corn, cts..... | 4,951 | 166,524 |
| Rye, cts..... | 430 | 22,373 |
| Beans, sks..... | 8,348 | 386,076 |
| Potatoes, sks..... | 23,797 | 589,962 |
| Onions, sks..... | 2,300 | 68,157 |
| Hay, tons..... | 2,068 | 75,655 |
| Wool, bales..... | 226 | 48,370 |
| Hops, bales..... | 15 | 6,908 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------|-----------------------|-------------------------|
| Flour, ¼-sks..... | 108,652 | 1,634,420 |
| Wheat, cts..... | 173,933 | 6,547,869 |
| Barley, cts..... | 11,799 | 2,523,738 |
| Oats, cts..... | ..... | 9,423 |
| Corn, cts..... | 2,538 | 23,104 |
| Beans, sks..... | 4,647 | 236,959 |
| Hay, bales..... | 497 | 42,023 |
| Wool, lbs..... | ..... | 12,727,776 |
| Hops, lbs..... | 11,342 | 612,584 |
| Honey, cases..... | 564 | 6,199 |
| Potatoes, pkgs..... | 2,197 | 149,094 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, December 29.—California dried fruits quiet. Evaporated Apples, common, 5¢ per pound; prime wire tray, 8¢8¼¢; wood dried, prime, 8¼¢8½¢; choice, 8½¢; fancy, 9¢9¼¢. Prunes, 3¢8¢ per pound, as to size and quality. Apricots, Royal, 7¢8¼¢; Moorpark, 9¢11¢. Peaches, unpeeled, 7¢10¢; peeled, 12¢20¢.

THOUGH the ramie plant is susceptible of cultivation in southern California, Arizona and New Mexico, one difficulty in the way of its use has been to find some cheap method of preparing the fiber so as to get rid of the gum it contains. It is reported that a London firm has solved the problem by the discovery of an infusion that extracts all the gum from the fiber. If so, this will lead to the use of ramie on a large scale, as when thoroughly cleansed it can be woven into fabrics almost equal to silk.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

| FOR THE WEEK ENDING DECEMBER 14, 1897. |
|---|
| 595,450.—CHAIR—I. B. Archer, No. San Juan, Cal. |
| 595,517.—LUGGAGE CARRIER—H. J. M. Baker, Port Townsend, Wash. |
| 595,372.—GAME—R. S. and F. B. Crooks, S. F. |
| 595,672.—ARTIFICIAL FUEL—J. T. Davis, S. F. |
| 595,673.—ARTIFICIAL FUEL—J. T. Davis, S. F. |
| 595,384.—SACK HOLDER—F. H. Gilbert, Ridgefield, Wash. |
| 595,567.—SADDLE HORN—J. W. Haggard, Portland, Or. |
| 595,316.—FOLDING CHAIR—I. G. Leek, S. F. |
| 595,334.—BICYCLE ALARM—S. J. Pachtz, S. F. |
| 595,501.—BICYCLE GEAR—J. E. Stoops, Dayton, Wash. |
| 595,356.—CAR FENDER—O. A. Sutherland, Keeler, Cal. |
| 28,033.—DESIGN FOR CABINET—E. H. Ellis, Pasadena, Cal. |

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

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IN

GARDEN AND FIELD.

A MANUAL OF PRACTICE WITH AND WITHOUT IRRIGATION, FOR SEMI-TROPICAL COUNTRIES.

By EDWARD J. WICKSON, A. M.

Professor of Agricultural Practice in the University of California; Author of "California Fruits and How to Grow Them;" President of the California State Floral Society; Horticultural Editor of the "Pacific Rural Press" of San Francisco, etc.

LARGE OCTAVO; 336 PAGES; 12 FULL-PAGE PLATES.

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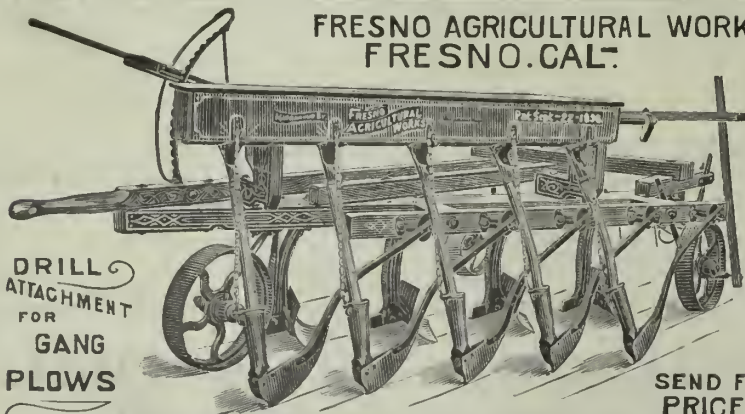
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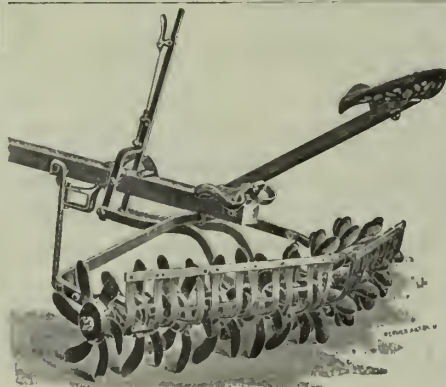
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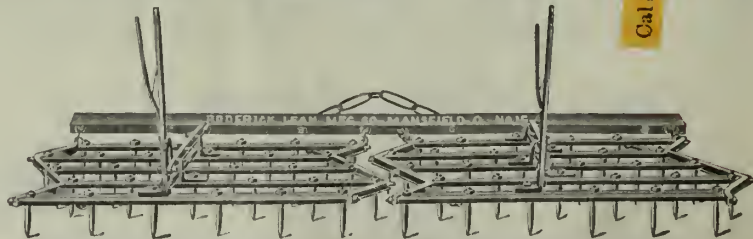
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 2.

SAN FRANCISCO, SATURDAY, JANUARY 8, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

Pomological Report.

The friends of California's fruit interests have demonstrated the advantage of speaking out one's mind. The Department of Agriculture at Washington recently published tables of the adaptability of different fruit varieties to the several regions of the United States as prepared by the committee of the American Pomological Society. The data about California was not as complete as it should have been, which is accounted for by the fact that Californians did not furnish the Eastern committee the requisite information. That answer would suffice, perhaps, with reference to the private publication of a society, but Californians warrantably urged that a publication by the Government could not be defended on that ground—the Government should have secured the information.

Urgent representations were made to Secretary Wilson by California representatives that the publication did great injustice to the greatest fruit-growing State of the Union, and considerable feeling was aroused both in this State and in Washington, if we can judge by the telegrams. Our people seemed to lose sight of the fact that the report did not claim to be a discussion of fruit production, but simply an effort to lay down a pomological tabulation of the success of varieties. They were also somewhat excessive in their denunciation of the publication, because, as a matter of fact, it has a number of tables which were put in merely to show California's adaptations, as, for instance, the olive, the almond and others. So far as information was available to the Eastern committee they seem to have worked earnestly and intelligently and a part of the misunderstanding of their work is due to the fact that California critics viewed the document from their own point of view and not that which guided the committee in its effort.

However, it is encouraging to our fruit interest to see how valiantly our newspaper critics and representatives at Washington take up their cause and call for fair recognition for the State. The fact that Secretary Wilson and Pomologist Brackett of the Department of Agriculture are disposed to grant to California all the distinction which pertains to her as a fruit region is seen in the telegraphed statement that the Secretary will appoint Professor Wickson of the University of California special agent of the division of pomology, and entrust to him the preparation of a report which will classify California by districts, and, with Washington, Oregon and Arizona included, will set forth accurately the capabilities of the country for fruit production. This appointment will give to Professor Wickson advantages of mails and expenses, "which will enable him to prepare an exhaustive bulletin on State pomological possibilities," as one of the Washington correspondents puts it.

Activity in Orchard Planting.

There is more activity in the way of tree planting this winter than in any season for some years past, and all the nurserymen from whom we have reports speak of doing an active business. The planting is especially brisk in Santa Clara county, where the orchard areas are fast becoming extended both north and south. County Horticultural Commissioner Erhorn informs a *Mercury* writer that "planting is brisk all over the valley, and that the prospects are

Corn in California.

Corn is not a great crop in California, though great corn is constantly produced in some places in the State. The plant enjoys heat but not dry heat, consequently we find the best corn on the river bottoms, or other moist lands in the interior, where rich land abounds and the atmosphere gains moisture by local evaporation. Rich moist lands near the coast, though protected from too sharp coast winds, also yield large corn, where the heat is adequate, and elevated interior valleys can also show good corn on suitable lands. Thus it appears that though corn has a wide range in California, the regions well suited to it are narrow and the aggregate crop is small. For this reason there is a constant movement of Western corn to California whenever the demand for local use or for shipment to Mexico and Central America is sharp enough to offset the freight cost.

But though corn as a dry grain is not largely produced, the use of the Indian corn plant as a forage for dairy stock and as a source of roasting ears is large. It is possible to get excellent green corn ears and forage even where the grain does not mature well, and these uses of the plant are increasing with the growing popularity of the silo and the spread of progressive dairying generally. Our acreage of green corn is constantly increasing. If we take into account Egyptian corn and Kaffir corn and other sorghum varieties which thrive in the dry heat of the interior, which is trying to Indian corn, it is safe to estimate that the corn acreage of the State has been doubled during the last decade, and the importance of corn as a feeding grain has risen nearer to the exalted position of barley than it ever has before.

The picture on this page shows how corn grows in California when it has the combination of heat and moisture which prevails on the underflowed and irrigated lands in the upper San Joaquin valley. In similar places in southern California the same tall and stalwart growth is secured. The engraving



CORN ON MOIST LAND IN UPPER SAN JOAQUIN VALLEY—FROM "CALIFORNIA VEGETABLES."

good for the improvement of an exceedingly large acreage of virgin soil. Many new orchards are being set out on the Murphy tract and in the region about Rucker and Morgan Hill. Prunes and apricots seem to be the varieties that have been preferred. Heretofore the Robe de Sargent and the small French prune, Petit d'Agen, have been the only varieties that have been given extensive planting in this valley. But the coming season will witness a list of a third variety—the Imperial—which is claimed to be superior to all others. It is sometimes called the Thorny prune, is very large and very sweet. Inquiries as to the method of using carbon bisulphide, the new remedy for tree pests, are constantly being made. In Mr. Erhorn's opinion it is possessed of all the virtues that are claimed for it, but great care must be taken."

is reproduced from "California Vegetables," by Prof. Wickson, just published by the RURAL PRESS. Of course, in that work, corn is discussed with reference to its table use, and growing practices suitable to the different parts of the State are given.

THE United States Department of Agriculture will soon issue as No. 66 of the Farmers' Bulletin series a pamphlet entitled "Meadows and Pastures; Formation and Cultivation in the Middle Eastern States," prepared by Jared G. Smith, Assistant Agrostologist.

MAJOR HANDY, special commissioner to the Paris International Exposition, in his report to Congress, recommends that an appropriation of \$919,600 be granted, so that a creditable display on behalf of the United States may be made.

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ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, January 8, 1898.

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The Week.

Weather and Crops.

The following data for the week ending 5 A. M. Wednesday, Jan. 5, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week... | Total Seasonal Rainfall to Date... | Total Seasonal Rainfall Last Year to Same Date... | Average Seasonal Rainfall to Date... | Minimum Temperature for the Week | Maximum Temperature for the Week... |
|----------------------|--------------------------------|------------------------------------|---|--------------------------------------|--|-------------------------------------|
| Eureka..... | | | 22.15 | 17.89 | 36 | 64 |
| Red Bluff..... | .00 | 6.06 | 11.46 | 11.14 | 32 | 68 |
| Sacramento..... | | | | | | |
| San Francisco..... | .00 | 4.07 | 11.10 | 9.65 | 44 | 63 |
| Fresno..... | .00 | 1.99 | 4.11 | 4.12 | 28 | 64 |
| San Luis Obispo..... | .00 | 1.58 | 7.74 | | 30 | 82 |
| Los Angeles..... | .04 | 2.56 | 5.11 | 6.68 | 46 | 88 |
| San Diego..... | .34 | 1.75 | 4.26 | 3.55 | 50 | 80 |
| Yuma..... | .04 | 0.89 | 1.98 | 1.78 | 42 | 76 |

The longed-for rain came early this (Thursday) morning and as we go to press, at 9 A. M., it is still coming down in goodly quantity, with good promise of continuance. At this writing it is impossible to know how widespread the precipitation is, but it looks like a "general rain." The southern portion of the State and the upper parts of the coast have been generously treated this year. California, generally speaking, had received less than one-half of her annual seasonal rainfall up to the time of the present downpour.

The Weather Bureau is preparing this week a general review of the climate and crop conditions of 1897, which will be interesting for reference. Concerning the recent low temperatures at the south, the following is said:

From a careful study of reports, it would seem that while the minimum temperatures recorded during the cold period were not quite so low in most sections as those of 1895, yet its long continuance would seem to make the condition equally severe. The fact that the damage is reported as less than in 1895 is probably due to the more extensive efforts at protecting.

It is impossible to tell yet what amount of injury has been done to the orange crop in this State by the low temperature. Los Angeles estimates range from ten to thirty per cent.

According to telegrams, Florida had a cold snap on January 1 and 2, which, fortunately, did not reach so low marks as the "great freeze." Mr. Hammon kindly furnishes us the following special information which he has received:

Special Bulletin of Florida.

WASHINGTON, D. C., Jan. 5, 1898.
Minimum temperatures at Weather Bureau stations in Florida in 1894 and 1895 compared with those of 1898:

| | Dec. 29, 1894. | Feb. 8, 1895. | Jan. 2, 1898. | Jan. 3, 1898. |
|-------------------|----------------|---------------|---------------|---------------|
| Jacksonville..... | 14° | 14° | 24° | 26° |
| Tampa..... | 19 | 22 | 28 | 28 |
| Jupiter..... | 24 | 27 | 30 | 30 |

Recent freeze not as severe as 1894 and 1895. Section di-

rector at Jacksonville reports by telegram this morning as follows:

"Available information indicates greater portion of vegetables north and south central portions killed where not protected. Pineapple damaged to considerable extent. Citrus trees not seriously affected through fruit belt, excepting tender sprouts." WILLIS L. MOORE,
Chief of Weather Bureau.

The San Francisco Produce Market.

In San Francisco, as elsewhere in the commercial world, January is, usually, an off month, devoted to stock-taking and a general clean-up of the preceding year's business; but this season, it is gratifying to report, things are comparatively active. In the wheat market there is no appreciable change since the last writing. Spot quotations stand precisely where they did one week ago. Options have bobbed up and bobbed down and to-day (Wednesday) are a trifle lower than last week; but the movement is wholly speculative and therefore without significance as related to actual business. Values on other cereals are strong. Barley in particular is stronger and is somewhat affected by the continued dry weather. Buckwheat is scarce and higher; and there is a strong demand for large yellow corn.

There is more doing and distinctly a better feeling in respect to dried fruits. All sorts are stronger, and for prunes and pitted plums the market is quotably better. Even the inferior goods which have so many weeks clogged the market are moving. For this class of stuff very low prices prevail, but anything is better than the dead stagnation of the recent few weeks. Stocks of dried fruit are light everywhere, under the extreme caution which has ruled in the East, and the buyers appear at last to be coming into the market. Prices are, of course, still very low, and this fact of itself will encourage consumption. It is the estimate of local dealers that there still remains in California about 1000 carloads of raisins and about half that quantity of prunes.

Prices for all kinds of livestock remain firm, but there is no advance. The local consumptive demand, it is now clear, will not stand up under much advance upon present rates.

Hides are higher and are firm at the advance. A notable feature of the hide situation is an advance of 25 cents on horse hides, which are now worth—for large—\$2.25@2.75 each.

The Eastern wool market, usually flat at this season, is now fairly active, and the hope is expressed that there will come an early movement in this market.

Railroad Experiment Project.

A railroad company with lines reaching from Portland into the Columbia river basin in Oregon and Washington—the O. R. & N. Co.—is about to attempt an interesting project in the way of developing the latent resources of the country. It has created an industrial department under competent management, which will experiment with various new crops with a view of finding new and more profitable forms of production for the Oregon and Washington farmers. Among the other things in view is the introduction of tobacco raising. A considerable colony of Cubans in Florida are negotiating to come out to the Pacific Northwest to raise and manufacture tobacco, and the parts of Oregon and Washington lying east of the Cascade mountains are believed to possess the conditions suited to the business. The destruction of the trade in Cuba has turned the attention of these people to other fields of operation, and they have sent agents here to look the matter up. Martinez, the great cigar man of Key West, examined the country east of the mountains recently, and he did not doubt that tobacco of a superior quality could be produced in the vicinity of Blalocks, in Gilliam county. The production of forage plants in the "inland empire" will also engage the attention of this move for industrial development. Incidental to this will come a thorough investigation of the possibilities of dairying and raising live stock under different conditions than now prevail—conditions that will admit of a further development of the country. A number of new trees will also be experimented with to see if they will not have the effect of precipitating moisture, so as to make fertile areas now arid.

Heavy Loss of Grain at Stockton.

Early Monday morning two large warehouses on the south side of the Channel at Stockton burned to the ground, and with them some 12,000 tons of grain worth nearly \$350,000. The water front for about two miles is one continual line of warehouses, all of which are piled to the roof with wheat. The Crown Mills, a seven-story structure, and the Union Mills were in the track of the flames, which were being fanned by a gentle breeze from the west with sufficient force to carry the fire along the line of the buildings.

The fire started in some unaccountable manner in warehouse No. 5, at the west end of the buildings, and spread at an alarming rate. Finding that it was impossible to save No. 5, the department fell back to warehouse No. 6 and succeeded in checking the conflagration about the time that structure was consumed. Had not the wind abated there would not have been a warehouse or mill along the front

saved. About 12,000 tons of grain were destroyed in the two warehouses, making a total loss of about \$348,000 for the wheat alone when figured at the ruling prices. The buildings burned will add about \$100,000 to the loss. Both of the warehouses were the property of the Farmers' Union of Stockton, and most of the wheat was owned by farmers who had not disposed of it, but were waiting for better prices. The loss is well covered by insurance, which will probably amount to about two-thirds of the total amount.

The Soledad Colony Project.

A meeting was held in San Francisco on Tuesday night, under the auspices of the Salvation Army, to formally "christen" the Soledad Colony project, under which it is proposed to establish the "unemployed" of hereabout in the business of growing beets for the Salinas factory. Subscriptions aggregating about \$1000 were received and will be added to the fund already in hand; and it is expected to begin the work of colonization immediately. This is a project conceived in the best spirit, undoubtedly, but since it proposes to do what the RURAL believes impracticable, we have no faith in it. As Mr. Berwick of Monterey recently pointed out, it would be unreasonable to expect the unemployed to succeed in a project which to any practical farmer would seem impossible. We look to see the settlement fail, of course, and can only wish that those who are putting up the funds for it had made wiser use of their money. The settlement will be called Fort Romie, after Mr. C. E. Romie of Soledad, from whom the land was bought.

The Horse Demand and Supply.

M. W. Dunham of Wayne, Ill., formerly well known to our readers as a breeder and importer of Percherons, gives the *Breeder's Gazette* some interesting comments on the horse situation in this country: By my experience of the past year I am able to report indications of renewed interest throughout the country. Farmers are beginning to realize that they will be short of horses for their own use before they can grow them of sufficient age for service. Breeding solely to supply the city or foreign trade is occupying less attention now than for many years. Self-protection against the effects of the past five years' suspension of breeding seems to be the lever that is forcing the reactionary activity. The mania to sell every horse not actually in daily use is passing; the talk so often heard about the folly of breeding when one could buy a horse for less than the cost of a year's keeping of a colt is not so often heard. The wonderful shrinkage in numbers of horses reported in every State and Territory, the sale of the best mares, the disappearance of a very large per cent of the good breeding stallions are facts that are being forcibly impressed upon the minds of our people. They are beginning mentally to grasp the situation in all its detail; many are making logical use of facts that heretofore have but slightly impressed them.

Sow wheat and in six months the product is ready for market; it is therefore easy to keep in touch with supply and demand; but to breed a horse ready for market it takes five years. Where the day of conception and marketing are so far apart there is great danger that the breeder will not take into full account the intervening conditions. All do not yet realize that we are now using only horses that were grown during the boom days or flood-tide of that wonderful period of horse-breeding when every man bred every mare possible, and there were stallions enough in every neighborhood to supply everyone. The horses that must supply the demand for the next ten years will have been bred during a period of the lowest relative production ever reached in this country. If prices have been low during the consumption and marketing of our five years of unprecedented over-production, a most violent reaction must occur during the time when our supply is being drawn from products of five years' failure of the colt crop.

If every man will take an account of stock to ascertain whether he has sufficient horses to last him until he can raise others old enough for service, I venture the assertion that there will be tens of thousands who will find that they will have to buy horses before they can supply themselves by breeding if they begin in the spring. It has been easy to buy when everybody wanted to sell, but it will be expensive to buy when so many former sellers become buyers instead.

Foreign Demand for Horses.

Secretary Wilson is zealously conducting his inquiry into the world's market for horses, and is closely studying the sources of supply and demand. He is now engaged in ascertaining what we have in the way of horses in the different sections of our country. Material collected during the inquiry will be published in a "Farmer's Bulletin," and thus placed within reach of our breeders and farmers who desire to follow the Secretary in his investigation. Our diplomatic and consular officers have been called upon to assist in collating data.

AGRICULTURAL REVIEW.

CALIFORNIA.

Alameda.

THE FIRST REAL CATTLE SHORTAGE.—Tom Keagh, a well known cattle man, in a recent interview spoke as follows: "I have been in the cattle business since 1870, and this is the first time I have come out with plenty of money in my pocket and have been unable to find cattle to buy. It is the first real shortage that has ever existed in my experience. The advance in the '80s was not due to shortage, but to the speculative demand by so many people going into the range business. Rich men were buying herds for their sons, and when they commenced to sell prices went down. For several years now cattlemen have been shipping everything to market that would bring a dollar. They spayed their heifers and fattened them; they even fattened the calves and two-year-olds. It used to be that only the three and four year old cattle were fed for market, and we used to see cattle weighing from 1200 to 1600 pounds. This year I am told that the falling off in the weight of cattle marketed will be over 60 pounds on the average. Next year the falling off will be over 100 pounds on the average, and that means a great deal of beef. The great bulk of beef cattle in this country are now concentrated in Nebraska, Kansas, Iowa and Missouri, where they can get corn. They will go to market next year and there will be no shortage then, for the average farmer thinks as long as he can see so many cattle around him that the world must be full of them, but after next year what? I do not know of a single large herd of cattle that can be bought. If the farmers want feeders next spring they will have to pay big prices for them, and this may hold the beef market steady but after they have cleaned out the cattle now on feed they will begin to see what a shortage really means. I have been expecting it and have been buying everything I could find for the year past."

Butte.

WHAT AILED THE TREE.—Yesterday a would-be orange expert was asked by a resident of this town to examine one of his trees. "There," said he, taking him to the yard, "is a tree without a single orange upon it, yet every other tree in my yard, as you will witness, is hanging full of fruit. Now I thought you could tell me the reason this one has no oranges." The would-be expert examined the tree with care, he talked scale for a few moments, binted at some mysterious disease, but finally concluded the roots of the tree were badly affected and advised his friend to apply fertilizer and put a fresh supply of earth about the roots. "I don't think you have hit the real cause, remarked the other with a smile. "The reason there are no oranges on this tree is because I picked off 550 yesterday." Now there is a Klondike coldness between the two.—Oroville Register.

RUMORS OF A CANNERY TRUST.—The Gridley cannery has been purchased by the Bendel-Nelson Company, with a capital stock of \$100,000. * * * There is a rumor to the effect that an effort is being made to consolidate all the canneries from Biggs down to San Jose, in one big combine. Should this scheme be consummated the result would be to place the big packers in a position to dictate the price for California green fruit and thus hold the grower more completely in their power than heretofore. The fact that a large part of the orchards is planted to clings makes it impossible for the orchardist to ignore the combine and dry his fruit.—Gridley Herald.

Contra Costa.

Grain farmers of Contra Costa county, according to the *Martinez Gazette*, are finishing their seeding earlier than ever before.

Glenn.

MYSTERIOUS MULE DISEASE.—A fatal disease among mules is reported to exist in this county, to what extent we have not been able to learn. On the Crow place, west of town, Amiel Peters last week lost seventeen head. The disease is first discovered on the throat of the animal, where a lump forms, which is followed by a gradual swelling of the whole neck. The animal is soon rendered unable to swallow its food or drink, and dies in a short time. Several of the animals were cut open and examined, and the disease was diagnosed as diphtheria. The alimentary canal was found completely closed and the throat badly inflamed, just as in the case with diphtheria.—Willows Promoter.

Humboldt.

HORTICULTURAL INSPECTION.—People of California are not a unit on the State horticultural law, and county boards of inspectors meet with considerable opposition in the discharge of their duties. While we are of the opinion that the State law, like the bureau of highways, is cumbersome and gives too many junketing trips, and a useless expense of money in some cases, we hold that a law looking to the protection of fruit trees in the State is absolutely necessary in view of the great magnitude of the fruit industry. * * * Aid and encouragement should be given our local inspection officers by owners of orchards and others, and all legitimate expenses should be willingly and promptly met by our board of supervisors. The argument used by some, that taxpayers in general should not be compelled to pay for protecting the industry of the orchardist, is a very narrow-gauge objection, and one that does not wash well with broad-minded legislation. As well it might be said that a bounty should not be paid for coyote scalps, when we have about 100 orchards to one sheep ranch.—Arcata Union.

Lassen.

The Diamond Mountain creamery at Susanville has proven a great success. Its product is in demand at good prices, and the farmers are entirely satisfied with financial results.

Los Angeles.

ORANGE OUTLOOK.—If the orange crop now on the trees in southern California can be marketed in good shape during the next four months, it means the bringing of between \$8,000,000 and \$9,000,000 into this region. The most conservative estimate puts the orange crop at 12,000 carloads. Los Angeles county's crop is reckoned at 3000 carloads. It is safe to say that an average carload of good marketable oranges is worth at least \$500. Then you must reckon on the money spent for picking, packing and hauling it, and a hundred and one other different expenses that go to the people of southern California—not to speak of railroad transportation. * * * Orange shipments have practically ceased for a short time, now that the holiday demand for oranges has been satisfied. The shipments of the fruit always begin actively about the first of February, and when the middle of March comes there are lively scenes in orchard and packing houses. Unless some calamity befalls the crop in the next few weeks, we shall see the liveliest scenes ever known in the orange business next March and April.—Pomona Record.

Monterey.

RAIN NEEDED.—Returning on Monday, 3d inst., from a trip to Salinas, Supt. Fillmore of the S. P. R. R. Co. said that the farmers in that section were in a state of fearful apprehension regarding the long-continued drought, which has already wrought great damage to dairymen. It is declared that if there be no rain within a few days much livestock must be shipped to other parts to save it, as pasturage is depended upon almost wholly for the matter of feed, and the

grass is already completely withered. So far as concerns grain, Mr. Fillmore says, there is no damage to report thus far, and rain within the next ten or fifteen days will make that crop safe beyond all peradventure.

Orange.

The Orange County Farmers' Club heartily endorses the Rural Mail Delivery bill and will send a memorial to that effect to Congress.

San Bernardino.

HOLIDAY ORANGE SHIPMENTS.—With each recurring holiday season there comes an increased demand for California oranges in the Eastern markets. With each recurring "cold spell" scare there comes a greater effort to rush the fruit upon the market. The high prices that usually prevail for holiday fruits are also incentives to shippers to get off as large a quantity as possible. This has induced the forwarding of many carloads of oranges totally unfit for consumption or even for show purposes. Heretofore the area from which these show oranges for the holiday trade could be drawn was very limited and the shipments from southern California were restricted. This year the oranges have colored earlier than usual and they are of excellent quality; the crop is an extremely good one, taken as a whole, though the seedlings are running rather small. This, together with the new orchards coming into bearing, has furnished a supply of colored fruit far in excess of that of former seasons. The total shipment of citrus fruits for the holidays made in 1896 from southern California was about 500 cars. This year upward of 1500 cars were shipped, though it must be said that some of those which went forward should not have left the orchards for several weeks thereafter. With such a large quantity poured into the Eastern markets, is it any wonder that prices dropped? To be sure there was a shortage of foreign oranges; but they hardly enter into direct competition with the California product. The imported fruit is of a poorer quality and is cheaper. It is purchased largely by the poorer classes. The California orange is something of a luxury and the wealthy are its consumers. The demand for this class of fruit is, therefore, more restricted than for the cheaper fruit, and it is easy to ship a surplus. This was the situation during the holiday trade of 1897. Dumping 1500 carloads upon a market heretofore supplied by not over 500 carloads has brought the decline in the market until prices are now as low for Redlands navel oranges as they were at any time last season. During the height of the shipping this fall an average of about eighty-five carloads a day went out of southern California. At present the total shipment will not exceed twenty-two per diem for the same territory. The present low prices are due, therefore, to two causes—the overstocked holiday market, which is largely for decorative purposes and restricted chiefly to the wealthier people, and, to a less extent, to the shipment of immature and uncolored fruit. Both these conditions will soon have been passed for this season, and we may, therefore, confidently expect that prices will not fall much, if any, below the present quotations.—Redlands Record.

APPLE CULTURE IN CALIFORNIA.—Fruit growers have not been slow to appreciate the possibilities of apple culture in this region, and this fruit now has a wider range of culture than any other fruit. Apples are now grown in every county in the State, and in most they are grown in quantity sufficient for exportation and may be considered quite a money crop. Exportations are made to South and Central America, to Australia, to Japan and the Pacific islands. These markets have received California apples for some years. But this year a most interesting condition has developed. California apples have been shipped in quantity to Eastern markets, some of which are in what have been considered the apple regions of the United States. This is significant of two important things. First, that California can and does produce apples in quantity, and, second, that there is no discounting their quality. Several counties have contributed to these shipments, but the coast counties lead.—Redlands Record.

But little damage was done to citrus groves in the Ontario district, says the *Record*. Very wisely, that journal adds that not a single frosted orange should be shipped. "No greater blow can be dealt the citrus industry of California than the shipment of fruit damaged by frost. Not only the reputation of the community from which it comes is hurt, but also the reputation of California as a whole. The *Record* is glad to note the disposition on the part of the shippers to use every precaution to guard against shipping frozen fruit."

San Mateo.

BIG SWEET PEA RANCH.—The *Redwood Times-Gazette* says that M. Lynch of Menlo Park has leased seventy acres of the Sweeney tract, near town, for the cultivation of sweet peas, which he is now sowing. This is the largest acreage of sweet peas by one grower in the United States. Seedmen claim that the seed will mature better in the low lands along the marshes than in any other place.

Santa Barbara.

The *Lompoc Record* is extremely earnest in its championship of the sugar beet proposition recently made to the farmers thereabout. "If our people will not," it says, "embrace this golden opportunity, but continue to grope along in the old time-worn ruts their fathers trod, if poverty overtakes them and life's prospect is dark and gloomy, they have no one to blame but themselves."

Sonoma.

At Mark West Creek last week a golden eagle swooped down on Mr. A. Sharp's piggery, attacked a young shoat with beak and claws and tore into its vitals. The bird returned the next day for a second feast and was captured in a steel trap. From tip to tip it measured seven feet.

Santa Cruz.

PAJARO VALLEY APPLE NOTES.—Forty-eight cars, containing 33,325 boxes of apples, have been shipped from Pajaro valley this winter to New York for reshipment to London. * * * The Burland Bros. have closed out all the apple trees they had in their nursery. They estimate their sales at 80,000 trees, 75 per cent of which were sold in this district. * * * James Waters, of the Pajaro Valley Nursery, reports that his apple tree sales have been unusually heavy, but that he has a good supply of Newtown Pippin stock on hand. The Eastern apple shipments during the past week were four cars—2714 boxes—to London, via New York. To date 216 carloads of apples have been sent East. Several carloads are contracted to go out within a few days. Mrs. Geo. D. Rodgers has sold her orchard on Lake avenue to Rilovich Bros. for four years. She is to get \$2500 per year for the apple crop. There are about 1500 trees in the orchard, nearly all being Newtown Pippins. It is estimated that the apple acreage of Pajaro valley will be doubled within five years—that there will be not less than 10,000 acres in apple trees. When the orchards of that acreage come into full bearing Pajaro valley will have from 4000 to 5000 carloads of apples for shipment each year.—Watsonville Pajaronian.

THE WATSONVILLE SUGAR CAMPAIGN, 1897.—The last beats of the campaign were sliced at 9:45 p. m. on Christmas day. Following are figures for the season: Hours run, 2483; tons (2000 lbs.) sugar produced, 14,888; acres harvested, 10,305; yield per acre, tons (2000 lbs.), 10 $\frac{1}{4}$. Delivery of beets extended over a period of 130 days, commencing August 18th and finishing December 25th. The mill's campaign lasted 119 days, from August 29th to December 25th inclusive. The

yield per acre was low on account of an unfavorable spring.—Pajaronian.

ONIONS SCARCE.—Onions are very scarce in this valley and are being imported from San Francisco for the Becker dryer. About 50 sacks of this vegetable and 200 sacks of potatoes are dried daily.—Watsonville Transcript.

OREGON.

NORTHERN PRUNE OUTPUT.—The output of cured prunes from the evaporators of Oregon for the past season has been at least 7,000,000 pounds. The output in Washington has probably been close to 4,000,000 pounds. These estimates are largely based on information from the several fruit growing localities. The bag manufacturers of Portland have during the past season sold enough prune bags to hold about 5,000,000 pounds of prunes. The box factories of Oregon have sold prune boxes to hold about the same quantity. It is probable, also, that some bags came into the State from San Francisco, and that some have been sold by Seattle and Tacoma dealers which were not made in Portland. Incidentally, we may mention that the publisher of this paper has during the past three months sent to Douglas county, Oregon, paper linings and wax tops for over 25,000 fifty-pound prune boxes.—Portland Agriculturist.

CATTLE OUTLOOK IN OREGON.—Cattle buyers are in all portions of the State, not so much for the purpose of making immediate purchases as to take in the situation and learn what number of cattle can be had when wanted next spring. Nearly all the two-year-olds in eastern Oregon were sold last summer at good prices. Next spring and summer the demand for young cattle will be in excess of the supply, and prices are considered as sure to advance materially over the quotations of last summer. Reports from the ranges are, thus far, very satisfactory. No severe weather has yet been encountered in eastern Oregon, and late rains have brought out the new grass. In Umatilla county there has been a light fall of snow, from 2 to 6 inches, that proves beneficial alike to the farmers and stockmen. In Crook county there has been an unusual amount of rain, and the immense ranges are in excellent condition. The weather there now is cold, and snow to a limited extent would be a good thing. There is plenty of hay for use in case of necessity, but those who keep an eye on the weather predict an early spring, without any intervening cold snap of any great extent.—Oregonian.

Weather and Crops.

SUMMARY OF THE REPORT OF THE U. S. WEATHER SERVICE FOR THE WEEK ENDING JANUARY 4, 1898.

General Summary.

No rain fell in the State of California during the past week. The temperature has been decidedly above the normal, except in the vicinity of San Francisco, where it has been cooler than usual. In the southern portion of the State the mean temperature exceeded the normal about ten degrees. At Los Angeles the temperature has been about fourteen degrees above the normal. There is a general cry for rain, and in some localities farmers are uneasy because of the absence of rain. Reports are conflicting as to the damage done to the citrus fruits by the severe frosts. The loss has been variously estimated at from 10 to 20 per cent of the crop. Grain growers are anxiously waiting for rain. In the south citrus fruit growers are irrigating. In some localities dry, desert winds have evaporated nearly all of this season's rainfall.

SHASTA.—Cold, with heavy frosts.

TEHAMA.—No material injury to citrus fruit. Grain not looking well because of extremely dry, cold weather. Plowing and seeding still in progress.

BUTTE.—Clouds and fogs have kept the temperature above the danger point, so that no injury has been done by frost. Grain is looking well. Pruning well under way.

COLUSA.—Great need of rain. Farmers plowing and seeding as fast as possible.

SOLANO.—Winter plowing finished. Summer fallow doing well. Rain greatly needed.

SACRAMENTO.—Large acreage of wheat being put in. Rain is needed. Now plowing and seeding.

YUBA.—Frost doing no damage. Plenty of moisture for plowing and seeding. A very large acreage has been seeded; the early sown looks well.

YOLO.—Continued heavy frosts. Rain much needed. Pruning.

SAN JOAQUIN.—Rain needed.

STANISLAUS.—Heavy frost; no damage reported. Plowing delayed for want of rain. Some seeding.

MERCED.—Farmers uneasy because of lack of rain.

KERN.—Feed getting very scarce.

FRESNO.—Plowing about stopped because of absence of rain. If good rains come soon much more grain will be sown. Pasture and wheat suffering.

ALAMEDA.—Dry weather is having bad effect on farmers. Many have had to stop plowing.

TULARE.—Need rain.

MONTEREY.—Cool, with light frosts.

SANTA CRUZ.—Getting too dry for crops. Rain needed.

SAN LUIS OBISPO.—Need rain.

SANTA BARBARA.—Ground getting dry and needs rain. Very little seeding being done.

ORANGE.—Farmers waiting for rain. Shipping some celery.

SAN BERNARDINO.—Oranges ripening rapidly. Rain needed very badly.

RIVERSIDE.—Normal output of oranges. Back country badly in need of rain.

SAN DIEGO.—Clear and dry; prevailing wind west. Seeding still in progress, though retarded by lack of rain.

Those Bad Birds.

The Mongolian Pheasant.

TO THE EDITOR:—Noticing items that Asiatic pheasants are being let loose in several California counties by the Supervisors and others, I feel it my duty to draw your attention to the fact that these birds are likely to become a curse to the country. I have lived in New Zealand, where, in outlying districts, these birds used to make three plantings of corn (maize) necessary very often, even after such precaution as soaking in strong bluestone liquid; even then crops were often only half a stand, owing to their depredations. Potato crops used to suffer, as the birds learned to scratch out the just-forming tubers. They also—and this is the most important in California—attacked fruit. From a sportsman's standpoint they are grand, but we orchardists have too many troubles to willfully introduce others.

San Francisco.

E. PETRIE HOYLE.

For That Woodpecker.

TO THE EDITOR:—In the paper of this week (Jan. 1) A. Hensing wants to know a remedy for a woodpecker picking holes in his house. Try boring a hole about the size of a large acorn, and either put a box or hang a sack to catch the nuts that may be put in there, as he is most likely trying to make holes to lay in a supply of acorns for future use.

Pleasant Grove.

SAMUEL M. COPPIN.

HORTICULTURE.

Mr. Burbank's New Prunes.

By LUTHER BURBANK of Santa Rosa at the Fruit Growers' Convention at Sacramento.

It is a well-known fact to all growers that the common French prune is not perfection in all respects. Many consumers complain that it is too sweet for constant use, and that it does not possess any specially agreeable or distinct flavor. It is not large. The tree is not as vigorous as could be desired, and it grows in such a way as to compel careful pruning to save the tree and produce annual crops of the best fruit. It might also be said that earlier ripening of the crop would be a great advantage, especially in the coast counties, where it is most extensively grown.

Realizing all these facts, the writer some twelve years ago began raising and testing numberless pure and crossbred seedlings from the French prune, and the work, which has been very expensive, has been extensively and faithfully carried on ever since.

Years ago I sent out the "Giant," a seedling of Petite, pollinated by Pond's Seedling, recommending it especially as a shipper, and perhaps in warmer parts of the State for drying, though it must be gathered from the tree, and it also shrinks more in drying than the Petite. Yet in many localities, especially in the warmer prune growing sections, it is winning a splendid reputation from the most extensive and critical growers for a drying prune. When bleached nothing could be handsomer in the way of dried fruit, and is much pleasanter to most tastes than the dead, flavorless sweet of the Petite.

"Splendor," so named by the introducers, is another crossbred seedling of the same parentage. This also sticks to the tree until dry. It makes a fine dried prune, but, having been in some cases greatly overrated and overdrawn, some will be disappointed with it.

Lately I have obtained some pure seedlings of the Petite which embody priceless improvements, the results of which the public will secure the benefit in a short time. One of these ripens a month before Petite, is larger and better flavored, otherwise exactly like it. Another is fully twice as large and better in every possible respect, ripening at the same time. These are the best among thousands on thousands which have been reared and fruited on my farms in this vicinity. Experts who have tested them have the highest opinion of them and say that they must supplant the other, older prunes.

I have not mentioned the Japan plums, the improvement of which during the past ten years has been simply marvelous.

Please understand that the best of my new varieties will be placed within the reach of all growers at the proper time. None are for sale at the present time. Do not write, do not come. It takes a world of time, labor, care and a mint of money to produce a really revolutionary fruit.

Should Fruit Tree Planting Be Encouraged or Discouraged?

By FRED C. MILES of Penryn at the Fruit Growers' Convention in Sacramento.

The question, "Should fruit tree planting be encouraged or discouraged?" is at the present time proving a stumbling block to the planter, but if he will look about him he will see that the answer to the question has been coming so plainly before him that he will wonder he did not heed it. My remarks are intended especially for the fresh deciduous fruit section of Placer county.

Some years ago, when any sort of a peach was worth money and would sell because there was a scarcity of the article, the planter was advised to put out any and all kinds that he could get, and he did so plant.

Since that period nearly all the localities near markets that we have been supplying have been trying to grow fruit. Old orchards have been vastly enlarged and new territory set out to fruit trees. The result has been that the plantings in every section, from Oregon to Texas and to the Atlantic, has kept pace with or exceeded our own. In years of plenty at these fruit districts (and the years will be continuous, for the sections are so widely apart that it is or will be very seldom that a general disaster will prevail,) our industry, founded on the money-making capacity of fruit in years past, will be and is reduced to the very verge of disaster.

There will always be a certain amount of our fruit wanted for all markets, no matter what their condition of congestion from local supplies. The wiser growers have already begun to put up specially guaranteed packs, and these will no doubt make a profit, as their fruit will command a price above the ordinary. A general return of prosperity will enhance this market by placing surplus money in the hands of the great working class, enabling them to become purchasers.

The question whether we shall plant or not can be answered by the advice to have the fruit in the East-

ern markets when it will meet the least competition. By doing this we will be more likely to receive the highest values for the fruit.

To have our fresh products in the Eastern markets at a time when there is a minimum competition will necessitate the planter selecting only the very earliest locations for the orchard, and then to put out only the fruits that will enable him to have fruit before his neighbors, except those having equally early places.

The kinds and varieties at present that promise the best returns for intelligent care in planting, for the future, are very limited.

The varieties planted at the Aloha orchard, one of the earliest locations in Placer county, are the Red June, the best of all the early Japanese plums, and the Triumph peach. This peach on the early ground alongside Alexander is ready to seed out with the latter. The Triumph is a yellow peach, with very rosy color, and no doubt will be heavily planted. Its only drawbacks are its being rather small and the tendency of the leaves to curl. The former is not very material, because the fruit is the first yellow peach and it will sell. The latter can be guarded against by sprays.

Rebudding Old Orange Trees.

Working over seedling or out-of-date orange varieties into the favorite sorts is of interest in all the citrus fruit regions, and no doubt many RURAL readers can do something in this line to advantage. At the last meeting of the Southern California Pomological Society Mr. E. E. St. Clair of Pomona gave pertinent advice drawn from his own experience.

Occasion for Rebudding.—When a man finds himself in possession of an orange orchard that does not pay, because it is made up wholly or in part of inferior varieties; if he is determined to raise oranges and make them pay, he must either dig out the inferior trees and replace them with young trees, or make a new top on the old trees by rebudding. It has been pretty well demonstrated during the past two or three years that the latter is the better way. A successfully rebudded tree should bear a pretty good crop of oranges in two years.

Choosing Buds.—Having determined to rebud, the first thing is the selection of buds, and if the Washington Navel is the variety sought great care is necessary that the buds be taken only from trees bearing the choicest fruit. There are few Navel orchards in full bearing in this valley that are not mixed with Australian Navels, and it is a great temptation to a careless or unscrupulous person to take buds from the Australian Navels, as they always have an abundance of fine buds. That, I believe, is why we have so many of those worthless trees. One can often get more fine looking buds from one or two Australian Navels than from a whole orchard of true Washington Navels.

Some people argue that Australian Navels are produced by using buds taken from suckers grown on Washington Navel trees. Were that true the same suckers, if left to grow and come to bearing on the Washington Navel tree, would bear Australian Navel oranges, which is not a fact.

Keeping Buds.—If the buds are to be kept some time before using they should be packed in damp moss or sand and kept in a cool, damp (not wet) place. Good, strong waxed cloth is the best material for wrapping.

If the trees to be built over are very old and have been trimmed high, it will be better to cut off the top and grow new wood to bud into. But in most cases it is better to bud into the old wood, as a year's time and a crop are saved by this method.

Time and Manner.—The best time to bud orchard trees is in the spring, as early as the trees come into prime condition. Do not try to bud before the bark slips freely. Put in three times as many buds as are necessary to make a top. It is much better to have all the buds ready to grow at the same time, so that the tree may be all cut back at once. The buds should be so distributed as to make a well-balanced top, and as near the main stock of the tree as is practicable. If you want them to live and grow, insert them where the bark is free, which will not usually be on the upper side of the branch.

Wrap the buds tightly and leave the cloth on for four months, more or less, according to the rapidity with which the buds heal in. Wait a short time after unwrapping to make sure the buds are going to live; then, if all is well, cut back everything to within a foot, more or less, of the bud, leaving if possible a little foliage above the bud on each limb. Paint the larger cuts.

The trunk of the tree should be protected from the sun, as it has been shaded so long it is liable to be burnt by the summer heat. Newspapers do very well for wrapping.

Treatment.—The new growth must be mostly kept off to force the sap into the buds, but always leave some of it distributed over the stub, especially above the bud and on the side most exposed to the sun. But keep it pinched back to two or three leaves.

This is important, as otherwise the stub is liable to die back, injuring or destroying the bud.

Watch your buds and cut them back occasionally to make them branch and grow stocky. They will need tying, both to prevent the wind from blowing them off and to direct their growth so as to make a symmetrical top. Where there is no convenient stub in the right place to tie to, California's main reliance, baling wire, may be used to advantage to furnish a support. The final cutting back to the bud should not be done until the bud is large enough to heal the wound, and the cut should be well covered with grafting wax.

After all, skill and good judgment are required from the selection of buds to the last cutting back, and there is a whole lot that can't be told in a paper.

The greatest mistake a man can make, if he is inexperienced in this kind of work, is to employ a skilled hand to bud his trees and then undertake the rest of the work himself.

In the discussion, as reported by the *Cultivator*, Mr. Boyd advised giving trunks of trees a good coat of whitewash to protect them when foliage had been removed. Bud to the height the branches are desired.

Mr. Kennard doubted the wisdom of budding on the under side of the branch. The new growth would be very apt to split down.

Hints on Lemon Handling.

Beginners in lemon handling can get some hints upon practice from a circular recently issued by H. K. Pratt of Redlands. He aims to give the latest approved methods in the production of a market lemon.

It is high time that picking lemons from all sizes and conditions, from 150 to 420 size, be relegated to the past and proper periods of picking and proper methods of curing be inaugurated. Never allow a lemon to grow larger than a 300 size, 2½ inches, or never pick them smaller than a 360 size, 2½ inches, bearing in mind that lemons that are to be thoroughly cured must be picked one-eighth larger than the figures given.

A lemon allowed to remain on the tree until 250 or larger can never be made a first-class lemon. It is coarse, already colored, lacks life and does not need same treatment as a green, proper-sized lemon, which is full of life and good keeping qualities; hence, when packed and shipped with the first-class stock, condemns the entire car by the decay, coarseness and over size, and as coming from packers who do not understand their business. If you pick at the proper time it is an easy matter to have your sizes and quality both right.

Picking.—The lemons must be picked in padded baskets—never in sacks. They must be taken out of the basket by hand, as you handle eggs, never dumped out. Cut your finger nails; clip close to the lemon; never pick when moist from fog or rains. Keep your boxes in the shade and haul to the packing house in the cool of the day. Lemons must never be picked immediately after irrigating. They irrigate lemons as little as possible across the water. Do more cultivating and less irrigating.

A washed lemon is of no value for a good keeper. The light brown roughness you see on lemons is said to be caused by the leaf rubbing. Take warning from this of the danger you can do by rough handling.

The reason why a packing association should also do its own picking is because many of the growers, or their careless help, will not do it properly, and as hard handling will not show at the time of delivery the packers must do this for their own protection. All the heavier and better class of packers in Sicily pick as well as pack their lemons.

Get into the habit of picking your lemons regularly as they grow to proper size, and arrange your irrigation accordingly. To have uniform keepers you must have uniform picking, and proper sizes will naturally follow.

They should be made so as not to come in direct contact with the sun. A curing room inside a room is the best. Double roof and double walls do fairly well, but, above all, they must have thorough ventilation. I would prefer an old barn with good ventilation rather than the most of the basements that are used, with their poor ventilation.

The burning of sulphur occasionally will not hurt your fruit, and will kill the vermin and renovate your room.

Shipping Vegetables at the South.

P. E. Platt of Los Angeles writes to the New York *Fruit Trade Journal* the following notes of progress with shipping vegetables at the south, under date of Dec. 15th:

In vegetables the situation has changed but little since our last report. There is a rather increased demand for our Winningstadt cabbage, which is now in prime condition. Price to-day f. o. b., 30 to 35 cents per 100 pounds. Stock is solid and averages,

say, from five to seven pounds to the head. Celery is moving in carload lots. We have a fine crop this year, and, with favorable conditions, we ought to move from 300 to 500 cars during the next four months. Our White Plume variety is especially acceptable to the trade. We have also the Golden Heart and Green Top, both of which are of superior quality.

The demand for cauliflower exceeds the supply. Market remains firm at from 40 to 50 cents per dozen. We are moving some very fine tomatoes also, packing them in crates holding about twenty pounds. They are quotable to-day at 90 cents per crate.

THE FIELD.

What an English Expert Thinks of Our Hops and Theirs.

Our esteemed exchange, the *Mark Lane Express*, has issued an "agricultural annual," which has many points of interest. One which especially attracts our attention is a review of the hop supply of England, in which our own State is accorded an honorable place as a hop region, but still the writer thinks England can do without foreign hops.

Foreigners in the Hop Field.—It can hardly be said that foreign competition in the English hop markets is exactly a modern innovation. Yet it was not further back than 1854 that the importations began to assume anything like a weighty position. A comparatively large quantity (nearly 120,000 cwt.) was imported in that year, but this was induced by the practical failure of the English crop, and the high prices consequently current. The general average value was then over £17 per cwt. During the following six years imports of hops were very small, and we are therefore brought to the year 1862, when the duty was abolished, if we seek for the date of the solid establishment of foreign competition in England. During the past thirty-five years hops grown in other countries than our own have always been in direct and telling evidence, and have continually exercised an influence more or less detrimental upon this branch of our agriculture.

My present object is to demonstrate the actuality of this influence, which is apparently reckoned as of little account by Governments and their officials, and, in order to do so, it is necessary for me to refer to the sources and character of the opposing products, and to inquire into the question of the necessity or otherwise of the free admission of such supplies, from the point of view of the welfare of our people at large.

The Supply Regions.—The chief hop growing districts abroad with which we have to deal are found in Germany (including Bavaria and Bohemia), upper Austria, Prussian Poland, France, Belgium, Holland, and the United States of America. The growth of hops has been tried in Russia, and seems to be extending there, and our own colonies of Canada and Australasia have also produced a few, some of which have been occasionally sent to us. It is not improbable that we may hear more of Canadian hops in the near future, as the qualities produced in British Columbia have been attractive, and suggest further extension. In the meantime, however, I need only concern myself with the imports from the countries which have hitherto supplied us.

During the past fifteen years (ending 1896) we have imported from the sources named 3,075,525 cwt., or an annual average of over 205,000 cwt. Of these, we received during the first ten years of the period by far the larger proportion from the European districts. From 1882 to 1886, out of 1,114,557 cwt., Germany, Holland, Belgium and France sent us 718,081 cwt. In the following five years we received from these countries 577,081 cwt. out of a total of 933,892 cwt., but during the years 1892 to 1896, when the total was 973,266 cwt., the European supply fell to 372,019 cwt. These figures demonstrate the rapidly increasing importance of the American growth, from which the balance came. In the first period of five years, the imports from America represented only 35½ per cent of the whole, while during the five years ending 1896 they had risen to the figure of 601,247 cwt., or no less than 62 per cent of the total quantity. It is impossible for me to express more forcibly the conviction that I have so long endeavored to convey to English planters, that in America is to be found their most powerful opponent, and that, unless some stringent measures are taken, they will eventually find that their industry has been absorbed and annihilated by their Pacific coast competitors. In fact, it is considered by many thinking men that the United States holds the key of the future hop world, and that it behooves all other districts which have made hop growing a specialty to protect themselves against the advancement of so dangerous a rival. As far as we are concerned, contentious trade with the States in hops is impossible. Good care is taken of their position by legislation over there, and the duty of 12 cents per pound (56s. per cwt.), now imposed under the Dingley tariff,

entirely prohibits any action on our part in the direction of competitive business. Our only safety is in self-protection; some day, perhaps, we shall better understand the necessity of such legislation as is necessary for this purpose.

But it may be asserted that foreign hops are essential to the production of our national beverage, and that if we keep them out of our country our people will suffer.

Character of American Hops.—It is true that other growths than our own present certain characteristics by which English brewers are attracted to them. For instance, Bavarian hops, by reason of the process of drying which is almost peculiar to that country, are marked by an extremely delicate flavor, which they impart, when used, to the high class light beers now so much in vogue. Belgian and Dutch hops are, on the contrary, coarse and inferior, but they are procured at very low prices, and therefore induce our brewers to operate in them for use in cheaper beers, when English hops are commanding fairly good rates. American hops are very pronounced in a rank flavor which is especially their own, and, owing to the virgin soils of California and Oregon, are remarkably rich in lupulin, the source of the oleo-resins which are so necessary to the preservation of beer. The objectionable strong flavor, however, tones down when the hops have been kept in store for twelve months or so; therefore, such sorts are finding favor with brewers to be used as yearlings, and from this point of view they may be looked upon by consumers as a desirable adjunct to English growths.

But whatever may be the advantages claimed by any growth of foreign hops over the English product, it does not follow that they are in any sense essential to English brewers, except so far as their competitive presence in our markets lowers the standard of money values, and enables brewers to add to their already enormous profits. It has been proved by the highest expert authorities that English hops, carefully grown and properly cured, can and do provide the brewer with all that he requires for the perfection of the finest beers, and that if foreign hops were altogether absent, the nation would be supplied with its favorite drink without any possible deterioration. Let us look at the facts which scientific research on this subject has revealed.

A Chemical Aspect of the Hop.—The chemical valuation of hops as an agent in the brewery is based upon the percentage of soft or oleo-resins contained in them, because upon these constituents the preservative capacity of hops mainly depends. Fine samples of Californians have been found to yield in analysis nearly 16 per cent of soft resins. Within a fraction of this figure are the results obtained also from fine samples of air-dried Hallertaus (Bavarian). These may therefore be accepted as the most perfect conditions obtainable in this particular of preservative power. But that it is possible to grow hops in English soil, and with the supposed hindrances of English climate, endowed in an equal degree with the desired quality referred to, is proved by the same series of analyses. From Worcester, the Weald of Kent, and Farnham, samples have been tested, and give results that only slightly differ from the highest standards quoted, in the relative proportions of hard to soft resins, a difference that, it must be admitted, is sufficiently noticeable, but not sufficiently important to affect the actual utility of the hops in the brewery. It is considered that even this small variation in the analysis will disappear with a little closer attention to the details of culture and management, which the intelligence of English planters can easily supply. When, however, we examine another essential element, which is thus far not known to be determinable by the most skillful chemist, and is only fully discernible by the olfactory sense of the expert, we can claim for our best English hops absolute superiority over all other growths of the world. I refer to the flavor or aroma, so delicate and yet so rich, that the atmosphere surrounding a quantity of pockets of ripe, well-cured hops of our choice growths is incomparable and unsurpassable. Without such hops our English beer could not have been brought to its present perfection, wherein our palate is gratified by refreshing purity, our nostrils inhale the aroma as of a newly-gathered bouquet of country flowers, and our whole man is aroused by just sufficient stimulant to give us vigor, without the slightest risk of any pernicious result. I assert, therefore, without any hesitation, that while English hops are as essential to English beer as the beer itself is necessary to the English people, foreign hops are neither essential to the quality of the beverage, nor desirable in the interests of its consumers, the public at large.

THE POULTRY YARD.

Poultry for Profit.

TO THE EDITOR:—As you did me the honor to comment so fully on my communication in the *Sonoma County Farmer* of recent date upon the above subject, may I ask the favor of space in the columns of your valuable paper, in which I may present a

further explanation of my plans. It is conceded that the present method of marketing poultry works a great worry on both the producer and the consumer, and the fact that 1500 head of Eastern poultry are necessary per week to meet the present requirement of San Francisco shows that the local industry is far below its possibilities, and that there is a good market close at home if conditions were favorable to the raiser. My idea was to form an association amongst a number of our ranchers, hire a stall in the City Market, put into it a No. 1 poultry salesman, and sell by placing the best quality of poultry on a parity with the best beef and mutton, and so on down, and sell direct to the consumers, and so avoid the commission merchant and the retailer's profit, which could be applied to the expense of running the stall. This, I believe, would give our people a much better return and induce them, therefore, to produce a much better class of chickens. The way this thing runs now the meat side of the question is practically abandoned in favor of egg production, whereas under proper conditions the meat ought to be produced right here and the money circulated at home.

It has been stated that a stall in a market would be but a drop in a bucket in the San Francisco poultry business. Possibly so; but from small beginnings great enterprises have sprung, and the consumers of San Francisco would not be long in finding out where they could buy the best of chicken meat for 15 cents per pound, instead of the unsatisfactory article which costs from 30 to 40 cents. A thing like that will soon advertise itself, and I predict that the adjoining stalls would soon have to fall into line and sell in competition, and from this it would spread to the commission man, and that is all that would be needed. The idea is to run the stall on business principles until the plan became of general adoption and then abandon it, as it would then be unnecessary.

I made a statement some time since that I could raise eggs at a cost of less than 6 cents per dozen the year round on the feed bill. This is doubted, and I here give the figures. I have been out of the business for some time, for various reasons, to my great regret and loss, but could not help it. I kept an account of all payments and receipts and my book shows that for a year the average per month runs thus per dozen eggs:

| Month. | Cost. | Month. | Cost. |
|---------------|----------|----------------|-----------|
| January..... | 3 cents | July..... | 4 cents |
| February..... | 2½ cents | August..... | 5½ cents |
| March..... | 3¼ cents | September..... | 7 cents |
| April..... | 2½ cents | October..... | 11½ cents |
| May..... | 3½ cents | November..... | 7½ cents |
| June..... | 4½ cents | December..... | 3 cents |

These figures speak for themselves, and are the result of experiment conducted on rather a small scale, but sufficient for all practical purposes. My principal grain feed was wheat, costing about \$1.35 per 100 pounds. I apprehend, however, that in large flocks the proportion could not be worked quite so close; and I also labored under certain disadvantages in putting it through, but the results more than satisfied me. I should be glad if any of your readers would write for publication upon the subject of the pro's and con's of the market question. I feel deeply interested in it, as I consider it a matter of very great importance.

C. F. KIRBY.
Santa Rosa.

About the Breeds.

A San Jose poultry person writes to the *Poultry Keeper* for a breed that combines all good points in this way:

I would like to ask a question in regard to raising poultry for eggs. The market here pays a premium for large white eggs, and they also want a large hen for the table, with yellow skin and legs. I do not know of any breed that combines these two qualities. I have been thinking that the desired result could be obtained by crossing, but I do not know what two breeds would make the best cross. Any information you can give me on the subject will be greatly appreciated.

The *Poultry Keeper* in reply calls attention to the fact that the querist's market prefers large white eggs, large hens, yellow legs and skin, and he does not know of any breed combining these advantages. Just so; for it is impossible to get all you want in one breed, as another point will be added by us—hardiness.

The Houdan lays large white eggs, and is a fine table fowl, being of medium size, but—it has dark legs.

The Plymouth Rocks, Wyandottes, Brahmas and Cochins are large and have yellow legs and skin, but—the eggs are not white.

The Leghorns have yellow legs, lay white eggs, but—the birds are small.

The Black Spanish and Black Minorcas lay large white eggs, the fowls are fairly large, but—they have dark legs.

The Indian Game comes nearer the mark than any other, but—they are not superior layers, nor are the eggs large.

We should suggest a cross of Indian Game males with Wyandotte or Plymouth Rock hens, or perhaps with Leghorn hens, but the Indian Games are not as easily raised as Brahmas. Some breeds are tender

when young and hardy when grown. The eggs would not be extra large.

Then, again, all hens in a breed are not alike. The Minorca, Houdan and Black Spanish hens lay large white eggs as a rule, but some of them lay small ones. No two hens lay eggs exactly alike. There will be different shades of color, the sizes will vary, and also the shapes. There is no breed that lays eggs of uniform color. The Brahma hens lay dark eggs (as a rule), but if one had a dozen Brahma hens, all sisters, the eggs of some will be lighter than those of others.

It may be seen, therefore, that we cannot get everything in one breed, not even by crossing (for crossing destroys the objects sought), as there will be something lost as well as gained. The general purpose hen has not materialized yet.

The fact is that the majority of the consumers do not know that the best table fowls are the ones with dark legs, with few exceptions. We would not give a Houdan for the table for two Plymouth Rocks, yet the latter has yellow legs, but the Plymouth Rock is more easily raised and therefore better in many ways. An Indian Game is worth two Brahmas so far as quality of flesh is concerned, but the Brahmas are better layers and hardier. The Langshan, with its dark legs, is a hardy bird, fine for the table, the hens are excellent layers, and they are far ahead of some yellow-leg birds for the table. The Dorking has no yellow legs and is worth three Cochins on the table, but the Cochin is a bird that lives where the Dorking will not thrive; hence, as one live Cochin is worth a dozen buried Dorkings, we prefer the Cochin.

So it seems we must educate the consumers. Give them quality, and teach them that the color of the leg and skin, and of the shell of the egg, is not an indicator of excellence.

THE STABLE.

Care and Management of Horses and Treatment of Slight Diseases.

By MR. GEORGE L. WARLOW at the University Farmers' Institute at Fresno.

Before giving you some practical suggestions that I have gathered, both by careful observation and experience in the care and management and treatment of slight ailments of horses, I might, with profit to you, add a few truths to be observed in breeding.

Principles of Breeding.—If my hearers have given any thought to the general subject of stock breeding, they must be aware of the fact that they cannot gather grapes from thorns nor figs from thistles. The general principle that "like produces like" is true throughout all animal and vegetable life. Everything brings forth after its kind. We sow pure seed and expect the produce to be of the same kind. Wheat will not produce rye nor will oats produce barley. The rule is just as true in animal life. The great principle that each begotten creature is but the sum or essence of what has preceded it admits of very few exceptions. We have only to apply this general principle, with a knowledge of the special characteristics of the various breeds and families of horses, and the business of breeding horses of any given type becomes greatly simplified. No one would breed to a Shetland pony with the expectation of producing a draft horse, nor to the ponderous Shire, Percheron or Clydesdale with the hope of the produce turning out a winner on the race course. The general characteristics of the breed to which the parents belong will be transmitted to the progeny and frequently many of the habits and manners of the parents. Permit me to give you one or two illustrations of my own observation as to the transmission of the habits of the parent to the produce.

Transmission of Traits.—I have a mare that, when grain is poured into her feed box, immediately seizes a large quantity in her mouth, at the same time pressing her nose hard against the bottom of the trough. Then she runs her nose in a circle around the bottom of the trough two or three times and then rakes the side of her nose and mouth against the side of the trough, at the same time raising up her head and throwing the feed from the trough to the ground. The same mare, when tied in a stall in the barn at night, after having satisfied her appetite on grain and hay, stands for hours and lifts her left hind foot (never using the right one), and with a sharp, short kick strikes the side of the stall a hard blow, then rakes her foot backwards against the side of the stall, very much marring the wood. These blows will be repeated at intervals of from fifteen to twenty seconds, and may continue for an hour or two before a rest is taken. Two of her foals, upon being weaned and given grain in a trough, immediately exhibited the same habit in relation to grain feeds, and a third one, when weaned and tied in a stall, would kick the side of the stall with its left foot in the same manner as its mother, and I never knew it to use its right foot in this habit.

Another mare, when you attempt to walk up to her in the pasture, will turn her right side to you and only permit you to walk up to her on that side,

turning around and keeping that side to you, no difference how many times you may attempt to walk behind her and approach her head on the left side. If you continue trying to approach her on the left side until she becomes tired turning around, she will run away. Another habit is turning her head to one side and with one eye looking at the top of the windmill when drinking from the tub at the base of the mill frame. She turns her head in the same way when you ascend the ladder in the hay loft if she is in the barn, and continues thus to hold her head until all the hay is thrown down and you descend from the loft. She has had two foals, one of which exhibits the first of these peculiar habits, and the other one the second. Vicious or good habits will be transmitted as frequently as the peculiarities I have mentioned. In proportion as the breed is firmly established and uniform in its characteristics, whether of color, size, conformation, disposition, gait or speed, so will the produce be uniform in the same qualities; there will be exceptions, but the rule will be uniform. What has been bred in the bone will be transmitted. Hence, in breeding, have a purpose as to types, disposition, size, color, conformation, and then look well to your mating. In this short paper I can give you but a hint on this subject.

Care and Management.—I am a firm believer in the tendency of animal life to adapt itself to its surroundings and conditions; consequently I believe in working the sires and dams that are to get and produce work horses, and in trotting or running, those that are to produce trotters and runners.

Careful or judicious work or driving will not hurt the dam when carrying her foal. She should have good, nutritious food, and be kept in good flesh if worked. If on grass, she should not be permitted to become thin and weak, and especially should this be looked after as the time approaches for foaling. An insufficiently nourished mother means an insufficiently nourished and weak foal.

Foaling.—As the time for parturition approaches the udder becomes enlarged and hard, wax will appear upon the end of the teats, and within twenty-four hours after the milk becomes white your foal will arrive. You can make no mistake if you observe this, and you should be near the mare for that twenty-four hours, stay up with her at night, if necessary, or, if you prefer, put the mare in a roomy box stall, take your cot and sleep next to the stall. You will be readily awakened by the noise made by the dam in the stall and can arise in a moment and be present for any assistance needed. See that the foal's nose and mouth are immediately freed from any obstruction that would prevent the air getting into the lungs, or your colt may smother. Do not draw the first milk from the mother. Be sure that the foal gets this. Nature has made wise provisions, that the first milk taken from the mother contains that which immediately stimulates the bowels of the foal, acts as a laxative to immediately cause evacuation of the bowels. When this has once taken place, your foal, if able to stand and suck, will take care of itself.

Breaking and Weaning.—If you use the dam, handle the foal and halter-break it when a few weeks old. If the mare is at grass, halter-break the foal when you wean it. In weaning the foal, separate the foal and dam, putting the foal in a lot where it can see the dam; it will then worry but little. Let it take the milk from the mother once in six or twelve hours for the first two days, then cease this. The milk becomes feverish by this time, and sometimes will cause the death of the foal. After ceasing to let the foal suck, withdraw the milk from the udder by the hand once or twice daily, for a few days, and all will be well. If the foal has not already been taught to eat grain, by feeding with the mother, it should be put in a lot or box stall with a colt that has learned to eat grain and feed given in a trough, either oats or crushed barley mixed with wheat bran in equal parts and wet before feeding. In a few days it will learn to eat and welcome you when you go to give it its feed. If properly fed it will lose no flesh by being weaned. Keep it on good grass, if possible, at all times; if not, feed liberally of grain and alfalfa hay. Let it have access to both kinds of hay. Under no circumstances, during the first year after the colt is weaned, should you let it be starved and get poor. This is the time to keep your colt growing and to make a good horse of it. Once starved for a few months, when a colt, and it is stunted and will never fully recover from it and make the splendid horse it would have been if kept fat and growing.

Feeding.—A man who never gave any attention to the class of horses he raises, who thought any kind of a scrub sire or dam was good enough to raise colts from, and who then always half fed and half starved his horses, said to his neighbor one time: "I wonder why it is I always have such poor horses?" And his neighbor, who was a practical man as well as somewhat of a wag, said: "I can tell you why; your horses are all sired by 'Cocklebur' and their dams were all out of 'Condition.' If you would have good horses give the young stock a good chance and keep them in good condition."

Halter-Breaking.—Horses love sugar, candy, figs,

fruit, or anything sweet, as well as children. If your colts are wild and timid when first weaned, when you go among them have a few raisins, dried figs, or lumps of sugar in your pocket; quietly offer them to some of your colts by holding it out to them in your hand. They are as full of curiosity as a child and, although timid, will keep approaching until they have smelled of your hand, and if ever they chance to get a taste of the sweets your hand contains the job's done and that colt is your friend. When he comes to you again be ready to give him another taste, and in a few days the wildest colt will be following you around the lot and shortly will permit you to fondle it, for the sake of being rewarded with a few sweetmeats. Now he is ready to halter; coax him in the barn and quietly put the halter on him. Do not at first try to lead him, simply take hold of the halter in your left hand, standing by his right side, and pull his head towards you, as if to turn the colt around. If he fails to come, press your right thumb into his ribs and give a few gentle pulls on the halter strap with the left hand; he will soon turn, as your thumb hurts him. Keep him turning for a few times, then release him, letting him wear the head-stall of the halter. Repeat this lesson a few times each day when about the colt, and then try him on the other side. He soon learns to come when you pull him on either side; then he will soon obey the halter when pulled in front of him, and your colt is broken to lead.

Always talk quietly and soothingly to your colts when they display any fear; you thus gain their confidence, and when confidence is once gained, if you continue to quiet them by command whenever frightened, they never forget it; and when driving them, if they become badly frightened, or you have an accident, frequently one quieting, reassuring word from you will still their fear and prevent them from running away.

Do not tie your colt up when first haltered; he may pull back and injure himself. The first time or two you tie him, and he finds that he is fast, he will likely pull back with all his strength. Be sure you have the halter strong enough, so he cannot break it. A foot of straw placed under him in the stall before you tie him soon breaks him of pulling back. The first pull he makes the straw slides his feet forward and he sits down so quickly he hardly knows what happened; a second attempt, and the same thing happens and your colt will hardly ever try it again. The straw prevents him from bruising his limbs and getting otherwise bruised, and usually cures him from ever attempting to pull back again for fear of sitting down.

Breaking to Harness.—Break your colts to drive at one year old. At this age they learn more readily, are more tractable, have but little disposition for persistent stubbornness. They have not attained sufficient strength but that you can manage them, and they cannot run away with you. If they throw themselves down when hitched their weight is not sufficient to break your cart shafts, nor are you likely to have your harness broken. Begin with them by putting the biting harness upon them; or the backband and crupper of a single harness, freeing it from the other straps, will answer the purpose. Be careful to harness gently and not frighten. Put on the bridle with side rein or overcheck rein, loose enough not to pull his head too high. Take the colt into a small lot or paddock, rein his head up, but putting the rein or overcheck rein into the water hook, and turn him loose in the lot. Side straps from the bit to the sides of the backband may be also used if desired, to prevent the head from being turned around to the side. These straps should not be too tight at first. Give short lessons at first, then increase each time, permitting the colt to wear the harness for an hour to two hours at a time. After a few lessons the head may be raised higher and side straps made shorter—never too short, to draw the nose too much toward the breast. This gives your colt carriage, and teaches him to carry his head up and straight. Do not punish by keeping his head in the position too long. If the bit makes the mouth sore, discontinue the biting harness for a few days. After a few lessons with the biting harness put on a single buggy harness, consisting of the backband, crupper, breeching and the shaft straps used in the breeching. Tie the shaft holders to the sides of the backband, run the shaft straps from the breeching to the shaft holders and secure them there. Now take your lines and run them through the shaft holders, along the sides of the colt, and then back and through the triangle on the breeching; buckle your lines together, take your buggy whip and get behind your colt; have some one lead him for a few moments and you walk behind and drive. At first the colt will be frightened at your walking so closely behind; but with some one to lead him, this fright soon passes away, and in the meantime the colt is getting used to your holding and pulling lightly on the lines. After a little the man can cease the leading by unsnapping the halter stem and walking in front of the colt, getting farther away, until he has gotten entirely away from you, and you are driving and controlling the colt. The lines arranged as I have suggested, enables you to keep behind the colt, as he cannot turn around suddenly with his head to you and wind himself up in the lines, compelling you to let go, and the colt run away, becoming fright-

ened at the lines dragging after him. In guiding the colt, when you desire to turn him, do so gradually, going in a circle, and if the colt refuses to respond to the rein, a few gentle taps with the whip on the opposite side from the way you desire him to turn, will cause him to respond to the line.

Begin immediately to teach him to stop at the word "whoa" when you pull on the line; always pull gently when the word is given—never jerk the colt. The lessons should be short at first—not long enough to get the colt too hot, as he is likely to become irritated and stubborn. A few lessons like this, and you can guide him anywhere, and he will obey the word "whoa;" always caress the colt with gentle pats when you stop him and he has been doing right.

After a few lessons run the lines between the hind legs instead of through the breeching, and drive him this way, taking care not to chafe the legs. This accustoms him to things around the hind legs, and many a time may prevent him from kicking and running away in cases of accident when hitched to buggy or wagon. After thoroughly broken to drive with lines and obey every pull of the lines hitch to a cart, put on a kicking strap, and with a little careful handling you can drive anywhere. After a little driving in a cart the colt can be put to pasture until two or three years old, and when taken up you will find the driving lessons given have not been forgotten, and a little handling in the start will make your horse a kind, safe and gentle animal, either in working or driving.

Shoeing.—Now, as the colt has become a horse, let us look a little after the shoeing, if you want to make a good road horse of him. Eight-ounce shoes in front and six-ounce behind is sufficiently heavy for the first shoeing, and until you can ascertain from its gait what it needs. If you have discovered that he interferes either in front or behind, by striking the pastern joints in traveling, have the smith correct this at the first shoeing. If the interfering develops after being shod, have the shoes taken off immediately and the trouble corrected. This may be done by having the outside halves of the shoes, either in front or behind, where the difficulty occurs, made double the weight of the inside half of the shoes, and then slightly rounding the inside under edge of the shoes. When you have your horse shod so that interfering is stopped, keep shod in the same manner, and in ordinary cases in a short while you will have his gait so firmly fixed that your horse will go with his feet wide enough apart not to interfere. If he is too widely gaited, or sprawls or paddles with the front feet—that is, throws the feet out when he picks them up and draws them in when putting them down, thus describing about a half circle—reverse the above described manner of shoeing by making the inside half of the shoe the heavier. This will draw the feet together in trotting and correct very materially his wide, sprawling way of going, and have a tendency to very much lessen the paddling, and in a short time a very much better way of going will be established. If the horse forges—that is, strikes the toe of the hind shoe against the bottom of the toe of the front shoe in picking up the front feet, which will always be indicated by the clicking of the shoes together, making you think your horse is playing blacksmith—correct this by shortening the toe of the front hoof, shoe in front as light as possible, and have the heels of the hind shoes made long and extending beyond the hoof from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch, with a blunt calk in each heel of the hind shoes. The hind shoes should be made from two to four ounces heavier than the front shoes.

Speeding.—The trotting speed of any ordinary horse that you use for light driving may be increased sufficiently to make him a good road horse by a little care, and occasionally, where the road is smooth, driving him for a short distance at the top of his trotting gait. Always keep him going squarely; when he begins to wobble or hitch behind, as if to half lope, slow up immediately, until he goes to a square trot, and then urge him along again. Never permit him to hitch or hop behind, or you will soon spoil all chances of improving his speed. This habit, once acquired, is hardly ever corrected. Listen to ascertain if every step is regular and as perfect in time as the tick of the clock. If his steps are not regular and the hind feet go click, click, click, you may know the strides of the hind feet are of different lengths. Correct this by making the shoe heavier on the foot behind with which the longer stride is made; the weight will shorten the stride of that foot. A little attention to this, in the beginning of any colt, will make you a fair road horse and frequently keep you from taking the dust from other vehicles.

Feeding and Watering.—Give horses a drink of water every morning before feeding; they enjoy it as much as you do a glass of water before your morning meal, and, after a drink, they relish their feed much better. This will add greatly in keeping your horses in good flesh. When working your horses, water both before and after feeding, giving them a drink just before starting to work—in fact, water in hot weather as frequently as can conveniently be done. They will be less liable to indigestion, then there is little danger of them gorging themselves

with water, as will be the case if they get extremely thirsty. When hot, give only a few swallows of water at first; in a few moments you can let them drink all they want and their thirst will be satisfied with one-fourth of the water they would have taken in the first instance, and there will be no danger of either founder or colic. Prudent and frequent watering saves feed and your horses will keep in better flesh, with much less feed than if they go long hours without water.

Sulphite of Soda.—Look after their digestion, and, if wrong, a tablespoonful of sulphite of soda, twice a day in their food, will soon correct it. If they refuse to eat the feed when this medicine is put into it, open their mouths and put the spoonful well back on their tongues. Sulphite of soda is a cheap medicine, and will stop all fermentation in the stomach and also soon purifies the blood. If given properly and regularly it will cure any case of incipient farcy. It cures what is called "alfalfa surfeit," that is, disordered blood from excessive feeding on alfalfa, which causes little bumps in the horse's skin, frequently forming sores and causing the hair to come off.

Alfalfa Feeding.—Feeding constantly either with alfalfa hay or alfalfa grass is not good unless your horses have access to straw or grain hay. Observe how the fences are eaten up around many of the alfalfa pastures. This would not occur if straw was stacked in the pasture where the horses could have access to it at all times. Alfalfa constantly fed seriously affects the horse's kidneys and causes disease, and sometimes causes the kidney to decay and result in the death of the horse. Horses fed constantly on alfalfa hay frequently have an impaction of the bowels and death results unless skillful treatment is used. Alfalfa fed with grain hay or straw, or with a change at intervals to grain hay, is all right and is splendid feed for horses, but the constant feeding of alfalfa without a change is injurious. Impaction of the bowels frequently occurs from sand being taken into the stomach. It is readily distinguished from a case of colic by the manner of the horse. In impaction the horse will mope about and, when he has pains, drop down, turn on his back and double up his legs; does but little rolling; when pain ceases he lies quietly in natural position. In colic he gets no relief from the pains; they are constant; he gets up and down quickly, rolls, bruises himself and is rarely ever still, is bloated badly. In impaction the horses are likely to be sick three or four days, unless the inflammation is excessive. Every horse owner should keep a syringe; they cost but little and save the lives of many valuable animals.

When you have impaction of the bowels, drench with a pint and a half of linseed oil and in a few hours drench again with a half pound of Glauber's salts dissolved in water. Give lukewarm. Take your syringe and use as an enema a pint to a quart of glycerine or olive oil, cottonseed oil, or, if you have neither in case of extreme emergency, use kerosene oil diluted one-half to three-quarters in warm soap suds, using castile soap enough to make a good suds. Never use kerosene without diluting well, as suggested. It is liable to blister and burn the intestines.

In all cases of colic, strains, founder, chronic indigestion, fever, inflammation of the bowels, I can do no better for those who do not desire to call in a veterinary than to suggest that you get Dr. Humphrey's Horse Specifics. They come in small bottles at a price of 60 cents each, and can be obtained in all cities of the druggists who handle these specifics. There is a specific for each different disease, and with every bottle a pamphlet giving full directions how to use and what for. They are not expensive, as a dose is only a few drops and they are very effective. I have had ten years' experience in the use of these medicines and know their value and effectiveness. I have never known a case of death by colic where the colic specific was given in time.

Washing the root of the tail three times daily in strong salt water will usually cure tail rubbing. If caused by worms, or your horse is troubled with intestinal worms, take a quart of quassia chips, soak twelve hours in two gallons of warm water or twenty-four hours in cold, and use two quarts as an enema once a day for three or four days and a cure will be effected.

Scours.—Never use the often-suggested old remedy of mixing eggs and flour and giving to a young foal for scours. Plaster Paris dust mixed with cornmeal is very effective in exterminating rats, if they eat the mixture and then take a drink of water, but no firmer wall will be cemented in the intestines of the rats than will usually be built in the foal by giving eggs and flour. Your remedy is effective for the purpose given, but it kills the colt. In scours, remove the cause that irritates the bowels by doses of castor oil suitable to the age of the colt; then give a teaspoonful of paragonic, and repeat the dose, if necessary. It is just as natural for a colt to have distemper or strangles as it is for children to have measles, and some seasons the distemper appears in a very mild form, in others violent. It is preceded by a period of incubation manifested by a staring coat, loss of condition, dullness, languor; then comes a rise of temperature of the body, drooling of saliva

from the mouth, and, as the fever increases, swelling appears in the front of the throat and between the two branches of the jaw. If swelling does not attack the glands and swell nearly to the root of the ear, but little alarm need be felt. As soon as swelling feels soft in any spot cut with a knife, giving good incision, deep enough to reach the pus and low enough to give complete drainage. The colt will soon rally when thus relieved. If glands are badly swollen and there is labored breathing, blister sides of neck over glands lightly, using turpentine, camphor and sweet niter, mixed in equal parts. This makes the very best of liniments and is inexpensive. Apply twice a day and rub in well. Never blister severely; also use hot applications to sides of neck. Hot bran put in nose-bag and hung on colt's head will steam the nostrils and windpipe and remove the difficulty in breathing. You will find Humphrey's Specific "C. C." very beneficial in severe cases of distemper.

Suggestions.—In closing this article I can only give a few general suggestions that may be of practical benefit to you. Treat your horses as nearly as possible as if they were human beings. They are the most sensible of all animals. Their organization, physically, is similar to the man—a medicine which cures any disease in the human system will usually do the same thing for the horse, if given when he is afflicted with the same ailment.

When your horse is sick, do not become hopelessly impressed with the idea that you are powerless to cure his ailment or afford him any relief. Use your common sense and apply such common remedies as you have at home and would apply to one of the family, if sick, until you could procure better and more effective remedies, but remember that an ounce of prevention is worth a pound of cure and the proper care and management as to feed, water, correcting slight diseases, keeping a good digestion, blanketing when standing hitched in cold weather, closing doors of barn, preventing draughts of cold air on your horses when put in the barn warm. In fact, give the same careful attention to your horses that you give to your other business, and the same prosperity will attend you in the long, useful, healthy life of your horses. Half of the causes of ill-looking horses, half of the cause of loss by their early death is attributable to our poor management of them.

I once had a neighbor who lost much stock, and, upon the death of either horse, cow or hog, he would invariably say, "Just my cussed bad luck," when, having used this expression one time, a friend said to him: "May I tell you a wholesome truth? It is not your cussed bad luck at all that causes your loss of so much stock; it is your cussed bad management." There is much wholesome truth in this that we might remember with profit in all our business affairs.

The world's production of gold in 1896, according to advance sheets of the forthcoming report of the Director of the Mint, was 9,817,991 ounces fine, valued at \$203,000,000, compared with 9,611,377 ounces fine, valued at \$199,304,000 in 1895. This increase of the world's gold output in 1896 over that of 1895 is not as great as was that of 1895 over that of 1894, which amounted to \$18,129,000; nor is it as great as the increase of any recent year over the preceding one. World's output of silver in 1896 was approximately 165,100,887 ounces of commercial value of \$111,278,000, and coining value \$213,463,700, a decrease as compared with 1895 of 2,187,842 ounces, commercial value \$1,474,606, and coining value \$2,828,725. The total world's production of gold from 1493 to 1871—that is, from the discovery of America to the year in which Germany took the first steps toward the demonetization of its silver—was 278,360,543 ounces fine, of the value of \$5,754,223,105.

A BILL has been introduced in Congress to appropriate funds for investigations and tests of American timber. The bill starts out with the following preamble: "Whereas, an enormous waste of forest products and incalculable loss of life and property occurs from ignorance of the true value and strength of American timber; and whereas a thorough examination and elaborate tests of our timber have been introduced in the forestry division of the Department of Agriculture, but have proceeded very slowly, and have now been entirely discontinued on account of deficient appropriations, therefore be it enacted, etc., that the sum of \$100,000 be hereby appropriated" for the purpose. It is provided in the bill that not less than 30 per cent of the amount appropriated be devoted to the testing of timbers of the Pacific coast.

The *Northwestern Stockman* says that never have the ranges gone into the winter with as few cattle as now. High prices have caused the marketing of everything available. Three-fourths were nothing but "feeders," though they brought the price of beeves.

The Department of Agriculture estimates the wheat crop of this country at 530,000,000 bushels. In 1896 it was 427,684,346; in '95, 467,102,947; in '94, 460,267,416; in '93, 396,131,725; in '92, 515,949,000; in '91, 611,780,000.

THE HOME CIRCLE.

His Sixth Birthday.

He has given up his cradle and his little
worsted ball;
He has hidden all his dolls behind the door.
He must have a rocking horse
And a hardwood top, of course,
For he isn't mamma's baby any more.

He has cut off all his curls—they are only fit
for girls—
And has left them in a heap upon the floor;
For he's six years old to-day,
And he's glad to hear them say
That he isn't mamma's baby any more.

He has pockets in his trousers, like his older
brother Jim,
Though he thinks he should have had them
long before;
Has new shoes laced to the top—
'Tis a puzzle where they stop—
And he isn't mamma's baby any more.

He has heard his parents sigh, and has
greatly wondered why
They are sorry when he has such bliss in
store;
For he's now their darling boy,
And will be their pride and joy,
Though he cannot be their baby any more.

—Georgina E. Billings.

An Empty Purse.

Little Miss Debby Gaines was counting the days to Christmas; there were only three, and the weather was bright and warm for the time of year.

"I've got to step fast to carry out all my plans," she said to herself. "It seems to me as if it were going to be a beautiful Christmas; it won't be like any I've spent lately, either. I shouldn't wonder if it turned out for the best, my losing that money I always call my Christmas money; anyway, I'll do the best I can to make up for it."

Miss Debby was sitting by the window sewing as fast as she could, while the light of the short winter day was going, mending a warm old petticoat and humming a psalm tune. Suddenly she heard a knock at the door; she lived in two up-stairs rooms, and could not see the street.

"Come in!" she said cheerfully, and dropped her lapful of work.

"Why, if it isn't Mrs. Rivers!" she said, with much pleasure.

The guest was a large woman, fashionably dressed. You would have thought that a very elegant blue jay had come to make a late afternoon call upon such a brown, chippy sparrow as Miss Debby Gaines. Miss Debby felt much honored and brought her best rocking chair; and Mrs. Rivers seated herself and began to rock. Her stiff silk gown creaked as if she were a ship at sea.

"What are you doing—something pretty for Christmas?" she asked.

"It may be for Christmas, but it isn't very pretty," answered Miss Debby, with a little laugh and shake of the head. "Tell you the truth, I was mending up a nice warm petticoat that I don't have much use for; I thought I'd give it to old Mrs. Bean, at the poorhouse. She's a complaining, cold, old creatur', and she's got poor eyesight an' can't sew, and I thought this would make her real comfortable. It's rather more heavy than I need to wear."

"I've been down town all the afternoon, and it's so tiresome trying to get at anything in the stores," said Mrs. Rivers. "They push you right away from what you want time to look over. I like to consider what I buy. It's a great burden to me trying to get ready for Christmas, and I thought I shouldn't do anything this year on account of my health. I've had large expenses this autumn. I had to have new carpets and a new outside garment. I do like to see the pretty things in the stores, but they were so full of people and so hot and disagreeable this afternoon."

Miss Debby had picked up her petticoat and was holding it close to the window while she sewed on the button with firm linen stitches.

"I haven't been down the street for two or three days," she said. "You'll excuse me for goin' on with my work; it's most dark, and I'll be done in a moment, and we can sit an' talk."

"It does me good to come and see

you once in awhile," said Mrs. Rivers, plaintively. "I thought I'd stop on my way home. Last year you had so many making."

"There aren't any at all this year," answered Miss Debby, bravely. "It wasn't convenient, so I thought I'd just try having another kind of merry Christmas."

"Sometimes I wish I had no more responsibilities than you have. My large house is such a care. Mr. Rivers is so particular about everything, and so am I." She gave a great sigh and creaked louder than before, but Miss Debby did not have the right sort of consolation to offer, and kept silence. "You enjoy having your pretty house," she ventured to say after a few moments; "you wouldn't like to do with as little room as some—" and Mrs. Rivers shook her head in the dusk, and went on rocking.

"Presents aren't nothing unless the heart goes with them," said Miss Debby boldly at last, "and I think we can show good feelin' in other ways than in bestowing little pincushions. Anyway, I've got to find those ways this year. 'Tis a day when we New England folks can seem to speak right out to each other, and that does seem good. Somethin' gets in the air. I expect now to enjoy this Christmas myself, though I felt dreadful bad last week, sayin' to myself 'twas the first time I couldn't make my presents. I didn't know how interested I was goin' to get; you see, I've made my little plans."

Then they talked about other things, and Mrs. Rivers grew more cheerful, and at last went away. She always found Christmas a melancholy season. She did not like the trouble of giving then, or, in fact, at any other time; but she had her good points, as Miss Debby Gaines always insisted.

On Christmas morning early Miss Debby waked up with a feeling of happy expectation, and could hardly wait to make her cup of tea and eat her little breakfast on the corner of the table before she got out her best bonnet and Sunday cloak to begin her Christmas errands. It was misty and dark, but the sunlight came at last, pale and radiant, into the little brown room; and Miss Debby's face matched it with a quiet smile and happy look of eagerness.

"Take neither purse nor scrip," she said to herself, as she went downstairs to the street. There was nobody else stirring in the house, but she knew that the poorhouse would be open and its early breakfast past by the time she could get there. It was a mile or so out of town. She hugged a large package under her shawl, and shivered a little at the beginning of her walk. There was no snow, but the heavy hoar frost glistened on the sidewalks and the air was sharp.

Old Mrs. Bean was coming out of the great kitchen, and when her friend wished her a merry Christmas she shook her head.

"There ain't nobody to make it merry for me," she said.

"I wish you a happy Christmas!" said Miss Debby again. "I've come on purpose to be your first caller, an' I am goin' to make you the only present I shall give this year. 'Tis something useful, Mis' Bean; a warm petticoat I've fixed up nice, so you can put it right on an' feel the comfort of it."

The old woman's face brightened. "Why, you are real kind," she said, eagerly. "It's the one thing I've been wantin'. Oh, yes, dear sakes! ain't it a beautiful warm one? one o' the real, old-fashioned quilted kind. I always used to have 'em when I was better off. Well, that is a present!"

"Now I'm goin', because I can come an' set an' talk with you any day, and to-day I've got Christmas work," and off Miss Debby went to the heart of the town again.

Christmas was on Tuesday that year, and she opened the door of a little house where a tired-looking young woman stood by an ironing table and looked at her with surprise. "Why, Miss Gaines!" she exclaimed, "where are you going so early?"

"I wish you a happy Christmas!" said Miss Debby. "I've come to spend

the day with you. Just through breakfast? No; the little girls are eatin' away yet. Why, you're late!"

"I didn't mean to be," said the young mother; "but I felt so tired this morning, and pretty sad, too, thinking of last year an' all. So I just let the children sleep. Nelly's got cold and was coughing most all night, and I couldn't bear to get up and begin the day. Mother sent for me to come over to spend Christmas, but I couldn't get the courage to start. She said she'd have some little presents for the little girls, and now I'm most sorry I disappointed her."

"That's just why I'm here," said Miss Debby, gayly, and with double her usual decision. "No, Nelly's not fit to go out, I can see, but you leave her here with me, an' you just get ready an' take Susy an' go. Your mother'll think everything of it, and I'll see to things here. Ironin'? Why, 't will do me good. I feel a little chilly, and Nelly and I can have a grand time. Now you go right off an' get ready, an' catch the quarter-to-nine train. I won't hear no words about it."

So presently the poor, hard-worked young mother in her widow's bonnet started off down the street, leading bright-faced little Susy by the hand, and Miss Debby and her favorite Nelly watched them go from the window. The breakfast dishes were washed and put away in such a fashion that Nelly thought it quite as good as doll's house-keeping; and then, while Miss Debby ironed, she sat in a warm corner by the stove and listened to stories and to Miss Debby's old-fashioned ballads, which, though sung in a slightly cracked voice, were most delightful to childish ears. What a Christmas morning it was! And after the small ironing was done, what pleasant things there seemed to be to do! Miss Debby rummaged until she found some little aprons cut out for the children, and first she basted one for Nelly to sew and then she took the other herself, and they sat down together and sewed until dinner time. The aprons were pink and added to the gaiety of the occasion, and they were ready at last to surprise Nelly's mother by being put back in their place in the same roll—all done even to buttons and button-holes—for Miss Debby found time to finish Nelly's as well as her own. And they had bread and milk for dinner and Miss Debby told stories of when she was a little girl. Altogether, there never was a happier Christmas day, and the spirit of Christmas, of peace and good will shone bright in Miss Debby's face. Her quick eye saw many chances to lend a helping hand to the poor, defenseless household. When Nelly's mother came home at night, heartened and cheered by her visit, she found the ironing and mending done, and a day or two later the pink aprons turned up all ready to put on. And

Nelly's tiresome cough, which sounded like the whooping cough, was quite stilled by some good, old-fashioned dose which Miss Debby mixed agreeably with molasses and put to simmer on the stove. There seemed to be no end to the kind and thoughtful things Miss Debby did that day in a neighbor's house.

She had started for home at dusk, just before it was time for young Mrs. Peller to get back, and was walking along the street a little tired, but very happy.

"Why, it's only half past four o'clock now!" she exclaimed, as she passed the watchmaker's window. "I mean to go and see Mrs. Wallis a little while," and she quickened her steps.

Presently Miss Debby Gaines came to a fine, large house, very different from the one she had just left, and took pains to straighten her little black bonnet as she went up the long flight of handsome stone steps. An elderly man servant opened the door.

"I wish you a happy Christmas!" said Miss Debby. "Can I see Mrs. Wallis, do you suppose, Mr. Johnson?"

"Oh, yes'm," said Johnson, with feeling. "I was wishing somebody'd come in, Miss Gaines, now it's beginning to get dark. The young ladies was here this morning, and brought their presents, but they'd made a promise to go out into the country with some young friends, so they aren't coming to dinner, and Mrs. Wallis has been alone all day. She was pleased to have 'em go, though."

By this time Miss Debby had crossed the wide hall to the library, where the lonely old mistress of the house usually sat. She hesitated a moment before she could speak.

"I wish you a happy Christmas," she said. "It's me, Mrs. Wallis—Debby Gaines."

"Why, Miss Debby!" and there was something in the tone of this hostess which told at once that she was glad to see a friend. "Why, Miss Debby! Come and sit down in this chair by me! I don't doubt you've been trotting about all day," and Mrs. Wallis held out a warm, affectionate hand.

"No, I've been keepin' house for Mrs. Peller, so she could go an' see her mother," explained Miss Debby, quite simply. "I had a nice time with her little girl that's just getting over a cold and couldn't go with the others. I was just on my way home. I thought I'd stop and see if there was anything I could do for you."

"Nothing, except to stay a little while and keep me company," said Mrs. Wallis. "My granddaughters are usually here, but they had a very pleasant plan made for them, and I was very glad to have them go. A skating party and a dinner at the Ashtons' country house, and a dance."

"Young folks will be young folks," said Miss Debby. "I should like to

For Croup,

asthma, bronchitis, or whooping cough, there is no remedy so sure and safe as Dr. Ayer's Cherry Pectoral. From the first dose its healing influence is manifest. The sufferer who has been kept awake by the cough falls into a restful sleep, and awakes strong and refreshed. Dr. Ayer's Cherry Pectoral is acknowledged to be a specific for all pulmonary complaints. Physicians praise and prescribe it.

It is now put up in half size bottles at half price, 50c.

"One of my children had croup. One night I was startled by the child's hard breathing, and on going to it found it strangling. It had nearly ceased to breathe. Having a part of a bottle of Ayer's Cherry Pectoral in the house, I gave the child three doses at short intervals, and anxiously waited results. From the moment the Pectoral was given the child's breathing grew easier, and in a short time it was sleeping quietly and breathing naturally. The child is alive and well to-day. Ayer's Cherry Pectoral saved its life."—C. J. WOOLDRIDGE, Worthen, Texas.

Ayer's Cherry Pectoral.

hear all about it when they come and tell. Everybody seemed to be going somewhere to-day; 'twas the nice, clear weather."

"There are all my pretty presents on the table," said Mrs. Wallis. "Somehow they haven't been very good company; this is the first Christmas in my life that I have happened to spend quite alone."

Miss Debby might not have done it without thinking, by daylight, but she drew a little nearer and took a hold of Mrs. Wallis' hand.

"You must have had a great many lovely things to remember," she said softly. "But anybody can't help feeling lonesome; I know how 'tis. Everybody misses somebody the world over. There was all of us together once at home, and I am a kind of sparrow on the housetops. But I've had a beautiful day so far. I own I was afraid you'd have a sight of company an' I should have to miss seeing you."

"I'm glad somebody wanted to see me," said Mrs. Wallis, more cheerfully, and they went on with much pleasant talk of both the old days and the present time, and Mrs. Wallis gave Miss Debby a cup of tea, and they had a happy little feast together there in the library before the humble, loving-hearted guest went away, leaving peace and good-will once more in a lonely and troubled heart.

She stopped here and there at the houses of other friends, forgetting in her happiness that she was empty-handed on Christmas Day, and everywhere she left a new feeling of friendliness and pleasant kindness. At one house she comforted a crying child by mending his Christmas top, and at another she knew just how to help a pretty girl to dress for her Christmas party, and sat down and took off her big woolen gloves to alter the refractory dress, which it had seemed impossible to wear. She was like a good angel as she sat there, sewing and smiling and making everybody's mind at ease.

It was late in the evening when this was done, and she had a long day, but she stopped, with great bravery, and asked to see the minister, and told him how thankful she was for his sermon on Sunday, and wished him a happy Christmas. The minister had been a little discouraged for some reasons, as ministers often are in spite of everything, and even some great kindnesses in the shape of welcome presents from his friends did not cheer him half so much as the sincerity and affection of Miss Debby's visit. And he watched the little figure go down the street with tears in his eyes. So few people could forget themselves to remember others as this dear parishoner could; it was worth living for, if one could sometimes help and refresh those who are the true helpers; and so he went back to his work in his study, feeling like a better and busier man than when he had left it.

So Miss Debby came back to her little home again. The fire was out and it was all dark, but she went straight to her small rocking-chair by the window and sat down to rest and to thank the Lord for such a happy day. And though her purse was empty, her heart was full, and she had left a little pleasure behind her all along the way.

Presently she lighted her lamp, and then she saw on the table a great package and a note beside it, and the note was from Mrs. Rivers.

"Something you said the other day," Miss Debby read, "made me feel differently about Christmas from what I ever have before, and I am going to try to make as many people happy as I can, and you must believe that my heart goes with these presents that I send you. They are some of my own things that I liked, and wanted to share with you, and I send with love."

Miss Debby's face shone with joy. She had always liked Mrs. Rivers, but she had pitied her a little; and now the note made her feel as if she had found a new friend and made her happy without knowing it. And so Miss Debby's Christmas came to its happy end.—Sarah Orne Jewett in Evening Transcript.

Gems of Thought.

Many, indeed, think of being happy with God in heaven; but the being happy with God on earth never enters their thoughts.—John Wesley.

"Glory be to God on high, and on earth peace, good will toward men. We praise Thee, we worship Thee, we give thanks to Thee, for Thy great glory, O Lord God!"

It denotes no great bravery of mind to do that out of a desire of fame which we could not be prompted to by a generous passion for the glory of Him that made us.—Addison.

If you have been waked through love into life, then your life's work is to transmute everywhere the transient into the permanent and the eternal, first in your own soul and life, then by what you are, and through your love calling out the eternal in all about you.

We grow so easily to forget our noblest and most splendid times. It seems to me there is no maxim for a noble life like this: Count always your highest moments your truest moments. Believe that in the time when you were the greatest and most spiritual man, then you were your truest self.—Phillips Brooks.

The greatest battles of life are fought in the arena of a man's own heart. His most powerful and his most insidious foes are within himself. The household of his daily thought and desires and purposes and imaginings contains enemies subtle and strong. In his own bosom the battle must be joined.—Philip Moxom.

Above the dim mists of superstition and materialism towers this majestic, colossal figure, mantled in holiness, his face all aglow with conscious, intimate communion with the Father, the ideal sanctified soul. One with the Father, because filled with the holy spirit; the son, because living in the spirit, in harmony with the divine will—"He hath left us an example, that we should follow in his steps."—"Light on the Hidden Way."

In the Nursery.

The three prime essentials in the nursery are fresh air, good food and pure water.

An infant's thirst is not quenched by milk. It needs clean water to drink with regularity.

Always hold a baby in your arms when feeding it in about the same position as if nursing it.

Rubber tubes, complicated nipples and nursing bottles are dangerous and should never be used.

Regular habits, proper food and long hours of sleep are necessary conditions to a healthy infant.

Have a rule for feeding the baby and do not vary from it. Without regularity the mother becomes a slave.

Plain, boiled water, given between feedings, will often aid the digestion and satisfy the child when restless.

Never put a bottle nipple into your mouth and then into the baby's mouth. This will often prove dangerous.

More infants' lives are taken by over-feeding than by starvation. Never liken an infant's digestion or diet to your own.

Do not feed the baby because it cries. This may be due to pain, and it is hurtful to fill an infant's stomach at such a time.

Vomiting and diarrhoea are indications that the child is either sick or approaching sickness, and probably needs a physician.

Cholera infantum would be of rare occurrence if proper attention was always given to the quality and quantity of the food.

A nursing mother who worries or who is exhausted or who indulges in excitement may become a source of danger to her infant.

Cleanliness as applied to the body, the mouth, the food, the vessels, the clothing, the furniture, the floor, the carpets, the beds and the atmosphere should be strictly observed.—Medical and Surgical Journal.

Fashion Notes.

Some of the prettiest gowns for afternoons "at home" are made of crepe de chine in the softest shade of gray over yellow silk. The skirt may be accordion plaited, with insertions of lace set in various forms, with tiny puffs of gray chiffon bordering each edge, or made full, with cords run in around the hips to give the close effect, and double ruffles of gray chiffon at the bottom. The blouse is either plaited or shirred around the neck in cords to match the skirt, and with shirred sleeves, a finish of cream lace, a yellow velvet belt with fancy buckle, and some velvet in the neck, nothing could be more charming.

For receptions and weddings the velvet costume is the *edition de luxe* of all the season's fashion in gowns. Green velvet trimmed with sable, and gray velvet with bands of chinchilla and a finish of steel, are both elegant. Young women wear velvet gowns this season.

White ostrich feathers and pheasants' quills are distinctive features of the winter millinery.

Black satin, finely tucked, makes very pretty belts to wear with separate waists. Fasten them with a fancy buckle or a knot of satin.

Sleeves seem to have settled down to their limit in size, for the season at least, and the comfortable fullness at the top still remains; but the skirt is gradually diminishing in width, two and a half yards around being the size of the latest model.

The new opera cloaks are indescribable elaborations of velvet, brocaded silk, lace and fur, made in long, voluminous coats, short and medium capes. One long garment of brocaded silk, with plaits in the back and a full front, has wide Russian sleeves, plaited in at the shoulder, and a short cape edged, like the sleeves, with sable, a sable collar and a lining of ermine. The other extreme of all this elegance is the medium length full cape of light-colored cloth, lined with silk and interlined with flannel, and a shoulder cape of shirred velvet, which also forms the high collar. Blouse coats of plain and shirred velvet, with fur revers, are the popular evening wraps for young ladies.

Tan-colored English walking jackets with large revers collars of mink or plucked beaver are very popular, as are beige-colored ladies' cloth jackets, with vest, collar and cuffs trimmed with straight rows of brown and gold gimp. Equally so are miroir velvet capes and capes of velours Russe lined with brocade and decorated with jet points and narrow fur bands; lovely white cloth double capes lined with pink, yellow or mauve moire, and bordered with ermine 2 inches wide; and peletines, Russian blouses, coats, capes and redingotes of elegant-looking silk plush exactly like sealskin.

A very stylish mourning gown, so pretty in design that it would be charming in any color, has the skirt made in singular fashion. The sides are of crepe, the front of cloth, the effect produced by a pointed tablier, which looks like an overskirt. The tablier is trimmed with narrow rolls of crepe set a few inches apart, each one describing a downward point in front. The bodice is in Eton effect, with triple revers of crepe, edged with dulled jet. A vest of black crepe de chine and a collar and bow of white lisse complete this sartorial alleviator of woe.

In lighter mourning all the airy gauzes, chiffons, nets and muslins are permissible and pretty. Evening dresses of black net over taffeta silk

are charming. Some women add touches of purple to these pretty frocks.

Bodices of black crepe de chine, trimmed with frills of plaited muslin or gauze, or even lightened by girdles or buckles of jet, are worn, while handsome black passementerie and braiding are much used for lighter frocks.

Cravats of white net, mull or liberty silk, trimmed with frills of lace, chiffon or net, are made easily, and may be as simple or as elegant as time, skill and purse permit. Owing to their airy daintiness they seem especially suitable for gifts.

Popular Science.

Dr. Sabouraud, in the *Annales de Dre matologie*, firmly believes that baldness is contagious, and that barbers' instruments are most common carriers of the contagion; but as customers come and go from one barber shop to another, it is difficult to trace each case to its source.

In an address delivered at the Victoria Institute, London, Lord Kelvin estimated the age of the earth, since it was sufficiently cooled to become the abode of plants and animals, to be about 20,000,000 years, within limits of error perhaps ranging between 15,000,000 and 30,000,000 years.

Kites sent up on Oct. 15th, from the Bull Hill Observatory, surpassed the record of Sep. 19th by more than 1500 feet. They carried the meteorological instruments to a height of 10,900 feet above the hill top, or 11,500 feet above sea level. The kites were sent up at 3:50 o'clock in the afternoon and reached the highest point at 6 o'clock. At that altitude the temperature was 43°, while it was 73° at the ground, showing as much difference as one might expect.

At 7:35 A. M. three fine trees were standing in an Austrian forest. In less than two hours a distinguished assemblage was reading the columns of a newspaper printed on paper made from the pulp of those identical trees. The experiment was made to show the perfection the process of paper making had attained. At 7:35 the trees fell to the ground. The timbers were at once stripped of their bark, cut into small pieces, and converted into mechanical pulp. This was placed in a vat and mixed with the chemicals necessary to form paper, and the first leaf came out at 9:34 A. M., in one minute less than two hours. Some of the sheets were then taken three miles, and the first of the printed papers was issued at 10 o'clock, two hours and thirty-five minutes from the tree.

Recently some interesting repetitions of Franklin's classic kite experiments have been made; but with the improved Hargrave kite, reaching altitudes nearly two miles high, and with this new force the phenomena observed are novel. One of the results shown by a long series of experiments is that the electrical condition of the atmosphere during a snowstorm is practically the same as during a thunder shower, the air being charged to an equal degree. Moreover, at the higher altitudes sparks could be obtained from the kite wire even on cloudless days. That the potential of the atmosphere increases with the height also received verification. Some of the experiments were made from the top of the Washington monument, and during severe thunder storms potentials as high as 3000 or 4000 volts were obtained. Observations, in fact, were recorded at other places—at the top of the Eiffel Tower, for instance—of voltages as high as 10,000.

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Rock Hill, S. C., May 24, 1897.



Coast Industrial Notes.

—The manufacture of linen is to be established in the Selatch mill at Salem, Or.

—Portland men have contracted for 5000 sacks of potatoes at Castle Rock, Wash., at 35 cents per sack.

—Logging camps along the lower Columbia, in Washington and Oregon, show evidences of life and activity, and the price of logs shows an upward tendency.

—Grain elevators are to be built at Flavel, near Astoria, Or. When the Astoria-Gobel road is finished and in operation, wheat will be shipped by vessel largely from that point.

—Southern California will market 12,000 cars of oranges this winter, about one-half of which will go east over the Santa Fe and the other half over the Southern Pacific, and it is estimated that in five years orange shipments will be two to three times as large. The eastern movement of lemons furnishes a large traffic.

—The shipments of California deciduous fruits for the season 1897 from May 1 to November 30 amounted to 5323 carloads, or 127,752,000 pounds. That was an increase of 1276 carloads over the shipments of 1896, and an increase of 755 carloads over those of 1895. These shipments do not include dried fruits, only fresh fruits.

—Of the 207 shingle mills in the State of Washington, 185 are shut down, and will make no output until after February 1. The daily product of the 207 mills when in operation is 12,560,000 shingles. The mills now in operation have only an output of 1,650,000. By a reduction of the output it is expected to raise the price of shingles from 90 cents to \$1.25.

—Imports of merchandise at San Francisco during the first eleven months of '97 were \$37,478,300, against \$34,073,600 for the same time in '96, and included \$8,568,000 from Japan, \$6,458,500 from China, \$2,241,703 from Great Britain, \$9,704,800 from the Hawaiian Islands, \$2,635,500 from Central America, \$1,600,800 from British Columbia and \$1,687,000 from the East Indies.

—President McKinley last week approved the bill prohibiting the killing of fur seals in the waters of the North Pacific ocean, passed by Congress last month. The act prohibits the killing of seals by American citizens, except as they may be taken on the Pribyloff Islands by the North American Commercial Company. It also prohibits the importation of sealskins into the United States, raw, dressed, dyed or manufactured. The penalty for violation of the law is a fine of not less than \$200 nor more than \$2000, or imprisonment for not more than six months, or both fine and imprisonment, for each offense, the forfeiture to the United States of the vessel, tackle and cargo employed in the illegal sealing being also provided for.

—The S. F. & S. J. Valley Road will bore a long tunnel near Rodeo, Cal. The contract will be let next month. The amount of the contract will be about \$450,000. This tunnel is to be 5700 feet in length; the third longest tunnel in California. The longest is that of the Southern Pacific near San Fernando, which is 7200 feet long; the next, that on the Southern Pacific's road to Santa Cruz, which is about 6000 feet long; and the fourth, that on the Southern Pacific's coast extension between San Margarita and San Luis Obispo, a tunnel 4000 feet. The longest tunnel on the coast is on the Northern Pacific line in Washington, 10,000 feet through the Cascade mountains. One of 13,000 feet is to be built on the Great Northern road in Washington.

—There has been a great deal said in the papers recently about the ship-building firm of Cramp & Sons, Philadelphia, locating in Seattle, Wash. These men do not contemplate such an addition to their business, but are anxious to dispose of four vessels that have been on their hands for nearly twenty-five years. In 1873 the Cramps took the contract to build four iron vessels for a concern in South Africa. The vessels were built according to contract and duly registered in Philadelphia. They are of uniform dimensions and of practically the same tonnage capacity. They are named the Pennsylvania, Illinois, Indiana and Ohio. About the time the vessels were completed the steamship company failed, leaving the vessels on Cramps' hands, where they have since remained. The Alaska excitement afforded the builders an opportunity to use the vessels and they were not long in making known that they proposed bringing them to Seattle after giving them an overhauling, and offering them to the Alaska trade. Out of this grew the rumor that they proposed establishing a branch of their great works there. The results are said to be well-made steamships and are regularly listed in the blue book. They are fitted out with modern equipment and probably well adapted to the Alaskan service.

—According to newspaper accounts, the Alaska Commercial Company has sold its properties to a London syndicate, the British American Corporation, capitalized for \$1,500,000. The assets of the new corporation includes the Le Roi mine, Rossland, B. C., and other gold properties. Its principal assets will be the property and business of the pioneer Yukon company, headquarters in San Francisco, including wharves, real estate, warehouses, stores and trading stations for thousands of miles, ocean and river steamers, sailing vessels, launches, barges and lighters, and the whole plant and stock, including merchandise and supplies in transit and at northern depots. Among the properties specified are three stores, with all appurtenances, at Circle City, Forty Mile Creek and Dawson City, trading stores, dwellings and 160 acres of land at Fort Selkirk; townsite property at Dawson City; one-fourth interest in eleven claims on Bonanza and El Dorado creeks; twenty adjoining claims on Bonanza creek; claim 21 on Bear creek; claim 2 on El

Dorado creek, which is said to be paying rich returns; claim 2B on El Dorado, and interests in all claims which may be located by parties now prospecting on Stewart and Sweetlark rivers. The English company will continue the mercantile and transportation business of the Alaska Commercial Company in San Francisco, and will engage in banking and mining. Referring to the above, Leon Sloss of the Alaska Commercial Company said yesterday that the British syndicate has no authority to announce that it had absorbed the Alaska Commercial Company. "We have had an offer from the syndicate, but until we see the cold cash there can be no sale. We want no stock; we must have only cash. We are not anxious to sell. We have just let a contract to the Union Iron Works for the rebuilding of the steamer Portland, and the St. Paul, the Dora and the Bertha will all be on the regular and direct run to Alaska."

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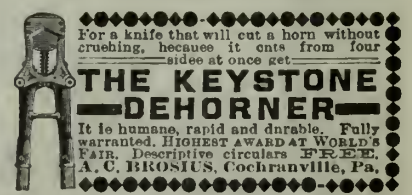
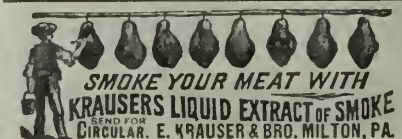
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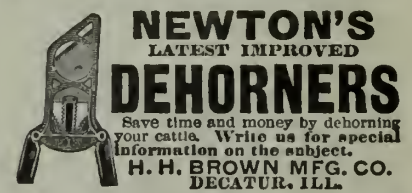
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Water Power and Momentous Changes.

The purposes for which water power is being utilized are greatly varied. It is used directly as electrical energy for lighting purposes and for chemical and metallurgical operations. Transformed again into mechanical energy by means of the electrical motor, it is used for working tramway systems, for producing wood pulp for paper making, and for driving machinery of all kinds at the mines or in engineering and other workshops. The significance of this new step forward in the application of water power to industrial purposes is startling. On the one hand, it signifies that man has at last learned how to effectually master and utilize one of the mightiest natural forces of the earth.

Coal is an exhaustible possession, and the day must come when the coal fields of the earth will be worked out. Our rivers and falls offer, on the other hand, an inexhaustible supply of energy; for so long as the heat of the sun evaporates the water of the sea, and causes it to fall again as rain upon the hills or as snow upon the mountains, this source will be available for the supply of man's wants, and the arrival of the time when the earth's coal fields will be exhausted need no longer be awaited with misgivings. But there is another aspect of this development which is less cheerful for contemplation by three of the nations of Europe. The position which England, Germany and Belgium occupy to day as the leading manufacturing countries of Europe has resulted chiefly from their possession of extensive coal fields capable of cheap development, coal having been in the past the chief factor in determining the industrial progress of any country. The progress of electrical science has, however, apparently changed the conditions of industrial supremacy, and it appears as though the possession, not of coal fields, but of water power, will be the determining factor in the future.

Whether the check of the natural growth and expansion of industry in the older manufacturing countries of Europe, that may already be observed as one result of the increased use of water power in countries hitherto of little or no account in the industrial struggle, will be followed by the gradual migration of the staple industries to the cheaper centers of power remains for the future to disclose, but it is a question of tremendous significance for the prosperity of the countries concerned.

A Railroad That Lifts Itself.

In Halford's patent railway the immediate motive power is the force of gravity, and the cars are, as it were, always running down hill. This result is achieved by making the permanent way in sections, whose length is to be determined by engineering considerations, hinged together and supported at each end on hydraulic rams. As the train reaches the junction of two sections it puts the hydraulic machinery in action, so that the ram rises, lifting the end of the section, together with the cars that are upon it. The train thus has a decline, down which it runs by its own weight, and as the same process is repeated with each section, it is practically always running down a falling gradient, continuous though of varying steepness. The necessary hydraulic power is conveyed through a pipe laid beneath the rails, and the admission of water to the cylinders of the rams is controlled either by electrical means from the cars, or by the weight of the train depressing the section it is about to leave, and thus actuating the supply valve. In the model built by the inventor the rails are raised on columns and the cars suspended on either side below the track, but the system is claimed to be equally applicable to trains running above the rails in the ordinary way, though in that case it is considered that the limit of speed consistent with safety would be much reduced. With a full-sized railway the stroke of the rams

necessary to produce a high speed would, it is claimed, not be very long, and the passenger would experience little, if any, of the switchback motion which might at first sight appear inevitable. As a model the invention works prettily.

Determining the Points of the Compass.

Methods to determine the cardinal points while on the mountains, in heavy timber and brush or upon the featureless expanse of a great marsh, are numerous and reliable enough for all practical purposes unless a very long journey is to be made, which would make it necessary to hold on a fine point while making so long a distance. Notes on the coniferous trees—pines, firs, spruce, cedars, hemlocks, etc.—show that the bark of these is always lighter in color, harder and drier on the south side of the tree, while it is in color much darker, is also damper and often covered with mold and moss on the north side. The gum that oozes out from wounds, knot holes, etc., is usually hard and often of amber color on the south side, while on the northern side it remains sticky longer and gets covered with insects and dirt, seldom drying out to more than a dirty gray in color. On large trees that have rough bark, especially during the fall and winter months, the nests and webs of insects, spiders, etc., will always be found in the crevices on the south side. A preponderance of the large branches will also be found on the warmest or southern side of the trees; also, the needles of all the above-mentioned trees are shorter, drier and of a yellowish-green on the southern side, while they will be found longer, more slender and pliable, damper to the touch and darker green in color on the north side. The cedars and hemlocks, as if trying to outdo the others, always bend their slender tops of new growth toward a southern sky. The hardwood trees are equally as communicative, and have all the characteristics, so far as regards their trunks, as the coniferous trees, except the absence of gums; but this is more made up by the fungus growth of mold and mosses that is very noticeable on the north side of these trees. The ledges of rocks, which may be part of mountains, or merely an occasional cropping out here and there in the woods, or, perhaps, some great boulder alone by itself—a silent witness of the glacial period—all alike testify to the effect of light and shade. The sunny side will usually be bare, or at most only boast of a thin growth of brush, dry kinds of mosses that will only grow when having the light, while the northern sides will be found damp and moldy and often covered with soft mosses and ferns. The forest floor on the sunny side of hills, ridges, clumps of trees, bushes, big rocks, etc., is more noisy under the footfall than on the northern side of such places, where the dead leaves and litter are soft and damp, holding more moisture than in places exposed to the light of the sun.

The times in which we live are great—so great that we can hardly conceive them great enough, so great that we, old and young, cannot be great and good and brave and hard working enough ourselves, if we do not wish to appear quite unworthy of the times in which our lot has been cast.—Max Muller.

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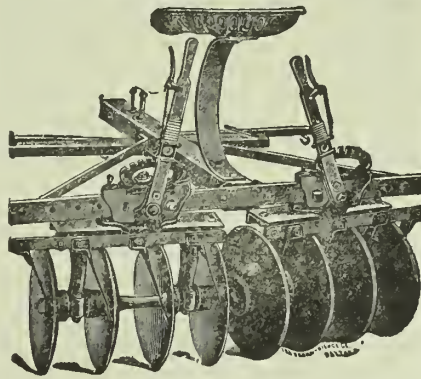
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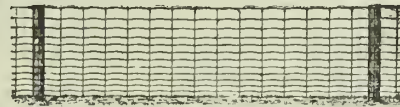
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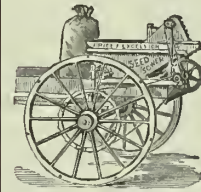
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By GUSTAV EISEN.

A Practical Treatise on Raisin Grapes, Their History, Culture and Curing.

This is the Standard Work on the Raisin Industry in California. It has been approved by Prof. Hildgard, Prof. Wickson, Mr. Chas. A. Wetmore and a multitude of Practical Raisin Growers.

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PACIFIC RURAL PRESS,

330 Market Street, San Francisco, Cal.

Long-Distance Telephony and the Railroads.

It does not seem within the scope of the ordinary human understanding that the immense passenger traffic of a railroad of the marvelous extent of the Pennsylvania Company, or any similar line, could be visibly affected by the long-distance telephone. Such a statement ordinarily would be received with ridicule and laughter by the common railroad officials, and treated with contempt by the higher authorities. Yet, no lesser personage than James McCrea, the head of the Western branches of the Pennsylvania system, told President M. E. Ingalls of the Big Four and Chesapeake & Ohio railroads that the business of the famous limited train of their company had been practically ruined by this instrument. These two gentlemen met in consultation in reference to commercial relations between the two lines, and during their negotiations the subject of the falling off of the passenger traffic of the country was brought up. Various reasons were given, when Mr. McCrea made his decidedly sensational statement. It is well known that the Pennsylvania Limited was originated and run in a measure for the benefit of the brokers and business men of Chicago and the Northwest, who needed quick action in the matter of travel. The trips to New York were taken upon occasions of utmost importance, when time meant thousands of dollars. By means of the Limited the broker or business man was taken to New York in the quickest possible way. There was no delay in getting there; it meant rapid business talk, and equally as quick a return to Chicago. The business man was willing to pay the price assessed for the development in rapid transit displayed by the Limited.

Then came the introduction of the long-distance telephone. People were slow in realizing its benefit. Slowly but surely they have, however, acquired its significance. A broker in Chicago or a grain dealer in that city has an idea for a big deal; he telegraphs to New York asking for certain information: "Call me up by long-distance telephone and give me your answer." The result is that for \$15, perhaps \$20, a talk is held with the New York man. He has had an opportunity to concentrate his expressions to the shortest possible statement; he has even jotted it down, and at the proper time calls up his man and transacts business. So it is done every day. Mr. McCrea gave as an evidence that in the past he found it necessary to spend twenty days in the month on the road, leaving but ten days of his time at home. By the aid of the long-distance telephone now he has reversed matters; it requires but ten days of his time upon the road, giving him twenty days at home. In Cincinnati, O., grain men, who have been in the habit of making two and three trips a week to Chicago, say: "Oh, yes, that has been the case with me; I have, for \$3 or \$4, been able to transact business which otherwise meant a trip to Chicago or St. Louis." The same way with commission dealers and brokers. They indorse the statements of the grain men, and state that the telephone has saved them numerous trips. The financial brokers and bankers use the telephone continually now; in fact, it is quite the feature of several of the more prominent brokers since they have their long-distance telephones, but it has never become so prominent a factor in railway circles as has been stamped by Mr. McCrea's

\$100 Reward, \$100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials.

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utterances. If it practically interferes with a great train like the Limited, a revolution is certainly taking place in railroad affairs.

An Arizona Pickling Plant.

The Arizona Timber & Lumber Co., at Belmont, is under contract to the Santa Fe Pacific to supply hewn ties for six years. The life of a tie is only four years. The Wellhouse patent, which has run out, will remedy this, extending the life of a tie to thirteen years. In the main building are two cylinders, each 110 feet in length, the pump and six compressors. To the north are two large tanks, set on a score of pillars of cement. East are two buildings for storage of chemicals and general supplies. Adjoining is a vat house with a tank in which is made concentrated zinc chloride solution. This tank is lined with lead three and one-half tons weight. The materials necessary to the solution are transferred by the trolley from the storage building. Steam is used in the cylinders and for motive power. On a platform 22 feet wide by 500 feet in length ride the cars loaded with ties, held to the iron trucks by chains. Thirteen of these cars will run into each cylinder, each cylinder having a capacity of 400 8-foot ties, when the cylinders are hermetically sealed. A "nigger" is operated at each end of the platform, the means of drawing the thirteen cars or trucks to and from the cylinders.

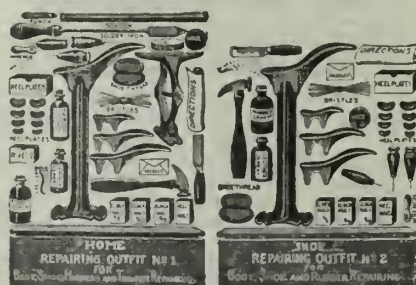
The treatment begins with sealing the ties in the iron cylinders or retorts. After the vacuum in the cylinders or retorts is pumped, steam is turned on for five hours. A vacuum is again created and then the chloride solution is forced into the cylinders, this solution being the antiseptic that enters into the wood and prevents decay. This pressure of 100 pounds to the square inch is kept up two hours. The entire treatment runs from twelve to fifteen hours. The two tanks outside of the pump room contain 95,000 gallons, one carrying the zinc chloride solution and the other the tannin solution, both necessary to the complete execution of the method of treatment, after the wood has received a steam bath. A tank lined with five tons of lead stands beside the two larger ones, this containing concentrated zinc chloride, which is fed from the tank previously mentioned. The whole process of handling ties from the loading on the trucks and taking a course of treatment to that of piling up again in the yard ready for delivery costs the railroad 15 cents per tie.

There are now 120,000 safed ties on the grounds. The capacity of the plant is 1000 ties per day. Ninety men are employed.

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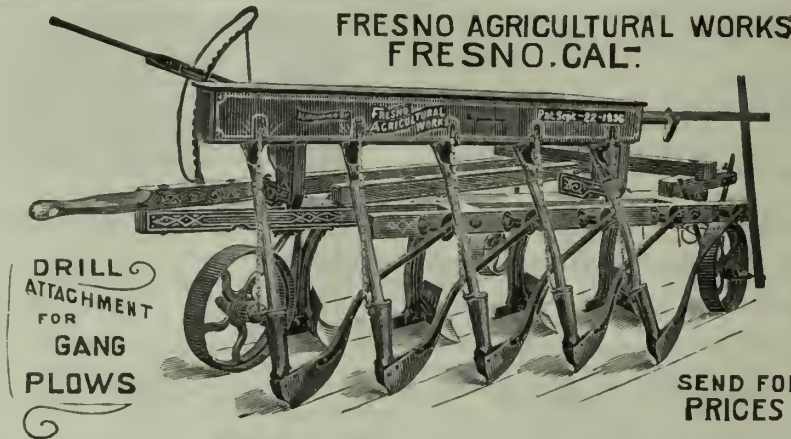
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the most famous (and most successful) veterinary specific of the age. It will cure curbs, splints, colic, lameness, shoe boils, thrush, horse ail, etc. Won't scar or change the hair. Locates lameness by remaining moist on the part affected.

Tuttle's Family Elixir cures Rheumatism, Sprains, Bruises, etc. Samples of either Elixir free for three 2-cent stamps for postage. Fifty cents buys either Elixir of any drug gist, or it will be sent direct on receipt of price. Money refunded if not satisfactory in every way. Particulars free.

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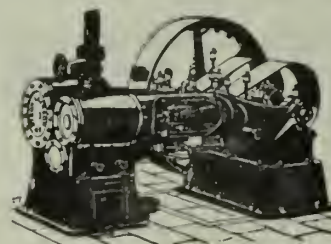


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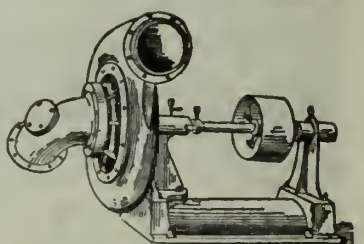


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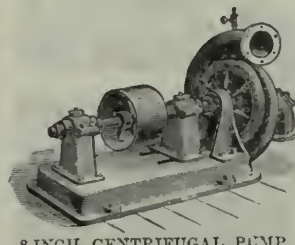
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S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, January 5, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|-----------------|-----------------|
| Wednesday..... | 94 1/4 @ 93 3/4 | 84 1/2 @ 83 1/4 |
| Thursday..... | 93 3/4 @ 91 3/4 | 83 1/2 @ 83 1/4 |
| Friday..... | 93 1/2 @ 92 3/4 | 83 3/4 @ 84 1/4 |
| Saturday..... | @ | @ |
| Monday..... | 92 @ 91 | 83 3/4 @ 83 1/4 |
| Tuesday..... | 90 1/4 @ 91 3/4 | 82 3/4 @ 83 1/4 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|------------|------------|
| Wednesday..... | 7s 4 1/4 d | 7s 1 3/4 d |
| Thursday..... | 7s 3 1/4 d | 7s 0 3/4 d |
| Friday..... | 7s 3 3/4 d | 7s 1 1/4 d |
| Saturday..... | @ | @ |
| Monday..... | 7s 2 1/4 d | 7s 0 1/4 d |
| Tuesday..... | 7s 2 1/4 d | 7s 0 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|---------------------|--------|
| Thursday..... | 1 39 1/4 @ 1 40 1/4 | 1 44 @ |
| Friday..... | 1 39 3/4 @ 1 40 1/4 | @ |
| Saturday..... | @ | @ |
| Monday..... | 1 39 1/4 @ 1 38 3/4 | @ |
| Tuesday..... | 1 38 1/4 @ 1 39 1/4 | @ |
| Wednesday..... | 1 39 1/4 @ 1 39 3/4 | @ |

Wheat.

The wheat market in this center cannot be said to be materially worse or better than a week ago. Trading has been mostly in options, and that not of a very brisk order. Speculative prices for remote deliveries averaged lower than for previous week, but these values were based, if on anything other than sheer manipulation, on the probabilities of the coming year, and proved of little direct aid in determining values of spot wheat. Business in actual wheat was insignificant, neither sellers nor buyers showing any anxiety. Free purchases were not possible at any lower figures than last quoted. In the meantime wheat continues to move outward. One cargo of 5300 tons cleared from this port Monday, valued at \$155,000. Such cargoes are not now out of the ordinary, but twenty years ago were unknown here.

During the first six months of the current cereal year 120 cargoes of wheat and two full cargoes of flour were shipped from the port of San Francisco, aggregating, in connection with other miscellaneous and minor shipments, 404,103 tons of 2000 lbs. For corresponding period in 1896 the shipments of wheat and its equivalent in flour aggregated 485,000 tons, and for 1895, 356,000 tons. Available stocks of wheat for export remaining in State on January 1st are estimated at 250,000 tons. Receipts from Oregon and Washington from July 1st to January 1st were 549,547 centals wheat and 156,048 barrels flour, representing a total in wheat of 50,884 tons. Amount reported on hand July 1st, 1897, was 52,513 tons. Deducting the old wheat carried over, also imports of the past six months, and allowing 350,000 tons for the annual home consumption, with the remaining surplus as estimated above, the estimate being based on the Produce Exchange statement of stocks, give 900,000 tons as the California crop of 1897, which quantity affords an exportable surplus of 550,000 tons. Including carry-over stocks and imports, the amount of wheat available for export on January 1st, 1898, was, as above stated, 250,000 tons. There were ships here on the 1st inst. sufficient to carry 75,000 tons, and the vessels on the way to this port represented a carrying capacity of 225,000 tons. This is about 15 ships more than required to move the surplus above shown.

California Milling.....\$1 42 1/4 @ 1 47 1/4
Cal. No. 1 shipping, alongside.....1 42 1/4 @
Oregon Valley.....1 42 1/4 @ 1 43 1/4
Walla Walla Blue Stem.....1 40 @ 1 47 1/4
Walla Walla Club.....1 35 @ 1 42 1/4

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 white wheat per cental for the week were as follows for the options named:

May, 1898, delivery, \$1.40 1/2 @ 1.38 1/4.
December, 1898, delivery, \$— @ —.

Wednesday, at regular noon session of Call Board, May wheat sold at \$1.39 1/4 @ 1.39 1/4;
December, 1898, — @ —.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|-------------------|-----------------------|
| Liv. quotations..... | 7s 2d @ 7s 3d | 8s 3d @ 8s 4 1/4 d |
| Freight rates..... | 17 1/4 @ 20s | 33 @ 35s |
| Local market..... | \$1.50 @ 1.57 1/4 | \$1.41 1/4 @ 1.43 1/4 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on December 1st and January 1st:

| Tons— | Dec. 1st. | Jan. 1st. |
|-------------|-----------|-----------|
| Wheat..... | 120,204 | *108,695 |
| Barley..... | 37,128 | †35,093 |
| Oats..... | 2,950 | 3,822 |
| Corn..... | 1,330 | 1,079 |

* Including 53,435 tons at Port Costa, and 50,965 tons at Stockton.
† Including 15,201 tons at Port Costa, 11,540 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 11,599 tons for month of December. A year ago there were 85,894 tons wheat in Call Board warehouses.

Flour.

Market has developed no special changes since last review, values continuing without quotable change, although under decided selling pressure the acceptance of lower figures would have been necessary. Supplies are not heavy. There was a fair outward movement, mainly of special brands. Trading on local account was light.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | 23 00 @ 23 25 |
| Superfine, good to choice..... | 3 35 @ 3 60 |
| Country grades, extras..... | 4 00 @ 4 25 |
| Choice and extra choice..... | 4 25 @ 4 50 |
| Fancy brands, jobbing..... | 4 50 @ 4 65 |
| Oregon, Bakers' extra..... | 3 90 @ 4 25 |
| Walla Walla, Bakers' extra..... | 3 90 @ 4 25 |

Barley.

Although speculative values touched lower levels than preceding week, prices in the open market for desirable qualities of either Brewing or Feed descriptions showed no quotable declines. Offerings by sample were not heavy. The demand was light, however, and was almost wholly local, consequently not much was required to satisfy the inquiry. The weakness in the option market was mainly due to weather influences. The prospects for coming season are certainly fair at this date, but it is entirely too early to make definite calculations. It is something like counting chickens before the eggs are under the hen. Market closed firm.

| | |
|---------------------------------|-------------|
| Feed, No. 1 to choice..... | 90 @ 92 1/2 |
| Feed, fair to good..... | 85 @ 90 |
| Brewing, No. 1 to choice..... | 95 @ 1 05 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

May, 1898, delivery, 82 1/2 @ 85c.

December, 1898, delivery, — @ —c.

Wednesday at regular noon session of the Call Board for May, 1898, feed 85c was bid, 86c asked.

Oats.

This market is practically in same condition as last noted, quotable values showing no change. There is a fair business doing on local account, but a good many more buyers than put in an appearance could be accommodated without causing any special scarcity of supplies. The outward movement is light. Only 476 tons have been exported in past six months, as against 965 tons for corresponding period in previous year.

| | |
|-------------------------------|---------------------|
| White Oats, fancy feed..... | 1 15 @ 1 17 1/2 |
| White, good to choice..... | 1 07 1/2 @ 1 12 1/2 |
| White, poor to fair..... | 1 00 @ 1 05 |
| Gray, common to choice..... | 1 10 @ 1 20 |
| Milling..... | 1 07 1/2 @ 1 12 1/2 |
| Surprise, good to choice..... | 1 15 @ 1 20 |
| Black Russian..... | 1 15 @ 1 50 |
| Red..... | 1 10 @ 1 40 |

Corn.

Values for this cereal are being sustained at about same range as last quoted. Large Yellow is most in favor with buyers at present, and commands the best figures. For many years past Large White and Small Yellow have, as a rule, sold for higher prices than Large Yellow. The second on the list is now Small Yellow, while Large White comes in as a poor third, demand for the latter being exceedingly light.

| | |
|----------------------------------|-----------------|
| Large White, good to choice..... | 90 @ 92 1/2 |
| Large Yellow..... | 97 1/2 @ 1 00 |
| Small Yellow..... | 1 00 @ 1 02 1/2 |
| Eastern Yellow..... | @ |
| Egyptian White..... | @ |
| Popcorn, shelled, 1/2 lb..... | @ |

Rye.

Market is moderately firm, owing to there

being little on hand. Not much increase in offerings would be necessary, however, to cause a depression in values.

Good to choice, new.....1 00 @ 1 02 1/2

Buckwheat.

With supplies in this center light, and mostly in the hands of one milling firm, the market is naturally against buyers.

Good to choice.....1 50 @ 1 60
Silverskin.....1 60 @ 1 65

Beans.

Holders in most instances are contending for fully as firm figures as last quoted, and in some cases refuse to let go at the prevailing rates. This appears to be justifiable as regards White Beans; prices for these are not high, but there is some doubt as to the advisability of holding on to colored Beans at existing comparatively high rates. Especially does this apply to Bayos. Prices for this variety have been crowded up to present levels through speculative purchasing. Some offerings of Bayos have been recently taken by speculative operators, not because they were particularly desired, but to prevent them going to other parties at lower figures.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 25 @ 1 35 |
| Small White, good to choice..... | 1 35 @ 1 40 |
| Lady Washington..... | 1 30 @ 1 40 |
| Butter, small..... | 1 25 @ 1 40 |
| Butter, large..... | 1 50 @ 1 60 |
| Pinks..... | 1 70 @ 1 80 |
| Bayos, good to choice..... | 2 90 @ 3 00 |
| Reds..... | 1 50 @ 1 60 |
| Red Kidneys..... | 2 00 @ 2 25 |
| Limas, good to choice..... | 1 60 @ 1 70 |
| Black-eye Beans..... | 2 25 @ 2 50 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

Late advices from New York by mail furnish the following review of the bean market in that center, prices quoted being per bushel of 60 lbs.:

So far as the jobbing trade is concerned there has been no improvement, nor is any looked for until after the turn of the year. Exporters have shown considerably more interest in Marrow and about a thousand barrels have been taken mostly at \$1.32 1/2 f. o. b. Some holders are still asking a little more, but buyers can secure all the stock they want at that price. The feeling on the whole is a little easier than a week ago. Small white beans have dragged, and enough receivers have been anxious to sell to give values a weaker tone. Toward the close \$1.17 1/2 has become an outside figure for the best marks of Medium, and \$1 12 1/2 is too seldom exceeded for finest Pea to warrant a higher quotation. Very good quality has been shaded 2 1/2c below those figures, and some pretty good Marrow sold at \$1.25. For Red Kidney the market has been unsettled and is still quite soft. Exporters have drawn only light orders and stock has been offering rather urgently; \$1 55 is named at the close and choice quality in shipping order, while equal quality has sold to dealers for less. Not much doing in White Kidney or Yellow Eye. Turtle Soup have further declined, and there is still very limited call for them. Lima quiet, but rather firmly held under stronger Western advices; quotable at \$1.30. Green peas have favored the buyer.

Dried Peas.

There are few coming forward, and in a limited way are selling to tolerably good advantage. Some recent transfers of choice to select have been made at an advance on quotable rates.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 60 @ 1 75 |
| Niles Peas..... | 1 40 @ 1 50 |

Hops.

The market is showing more life than is ordinarily experienced at this time of year. The shipping demand is mainly from England to cover a shortage which it was expected would be filled from Germany, but the latter country appears to have no more hops to spare this season. This rather late and unexpected inquiry from abroad is proving fortunate for the few producers in this country who are still in the market. Most of the growers on this coast have closed out their holdings. It is the exception when firmness and activity are experienced in the market for this commodity during the latter part of the season or after the midwinter holidays.

Good to choice, 1897 crop.....11 @ 15

The hop market on the Atlantic side is thus outlined under recent date by a New York authority:

Exporters have been very busy again this week, as will be seen by the heavy shipments. A good deal of this stock has come from the Pacific Coast on through bills of lading, and several carloads have been shipped directly from the State. Other lots were taken out of store here, some of which were fresh purchases. The tenor of European advices has continued quite strong, leading to the belief that a demand exists in England which must be partially met from here. It is quite certain that Germany did not grow as many hops as was estimated, and she will probably want practically all of her crops for home use. Business with brewers on this market and to the out-of-town trade has been quite satisfactory, and a number of lots have passed from dealer to dealer. All this has strengthened the position, and values have hardened a little on nearly all grades. Stocks of '96 hops are light and quite firmly held. In the interior of this State buying has been free, with most sales in range of 14 @ 15 1/2c. Choice growths in small compass and would bring more money. On the Pacific Coast the markets are all higher. It is estimated that about 50,000 bales are still unsold, but fully 50 per cent of these are of poor quality.

Wool.

The local market is inactive, as is ordinarily the case at this time of year. In fact, the

entire month of January is generally a dull period in the wool trade. It is expected, however, this season that buyers will be in the market much earlier than usual. In the Eastern wool centers considerable business was transacted, mostly in Territorial wools, right in the middle of the holiday period just passed. The market has a very healthy tone. Prospects are favorable for coming clip meeting with a prompt market at profitable figures for the grower.

SPRING.

| | |
|-----------------------------------|---------|
| Oregon Valley..... | 17 @ 18 |
| Oregon Eastern, choice..... | 13 @ 15 |
| Oregon Eastern, fair to good..... | 10 @ 12 |

FALL.

| | |
|----------------------------|-----------|
| Middle County, free..... | 10 @ 13 |
| Do do defective..... | 9 @ 11 |
| Northern, free..... | 11 @ 14 |
| Do defective..... | 10 @ 11 |
| Southern Mountain..... | 9 @ 12 |
| Lamb's free..... | 10 @ 11 |
| Lamb's defective..... | 6 1/2 @ 8 |
| San Joaquin defective..... | 7 @ 8 1/2 |

Millstuffs.

Bran tended in favor of sellers, but not enough to warrant any marked advance in quotable values. Middlings ruled steady. Rolled Barley was offered at same range of values last quoted. Market for Milled Corn did not incline to any noteworthy degree in favor of buyers.

| | |
|---------------------|---------------|
| Bran, 1/2 ton..... | 18 00 @ 19 00 |
| Middlings..... | 20 00 @ 22 00 |
| Barley, Rolled..... | 19 50 @ 20 00 |
| Cornmeal..... | 22 00 @ 22 50 |
| Cracked Corn..... | 23 00 @ 23 50 |

Hay and Straw.

There was a very fair demand for hay, and sales were in the main at full current figures. The cheaper grades were especially in good request, with supplies of the latter now down to small proportions. Present indications are that there will be little or no necessity for carrying much hay of any sort into the coming season. Straw is without improvement.

| | |
|----------------------|---------------|
| Wheat..... | 11 00 @ 15 00 |
| Wheat and Oat..... | 10 00 @ 14 00 |
| Oat..... | 10 00 @ 13 00 |
| Barley..... | 9 00 @ 12 00 |
| Clover..... | 8 00 @ 10 00 |
| Stock Hay..... | 7 50 @ 10 00 |
| Alfalfa..... | 8 00 @ 10 00 |
| Compressed..... | 10 00 @ 14 00 |
| Straw, 1/2 bale..... | 30 @ 40 |

Seeds.

Not much doing at this date in seeds of any description. Mustard Seed is virtually out of market, and in consequence any quotations which may be now named represent little more than nominal values. Flaxseed now coming forward is the property of the oil mills, having been held back to await the convenience of owners. Alfalfa Seed is being offered at same figures quoted for several weeks past.

| | Per ctt. |
|----------------------------|-------------|
| Mustard, Yellow..... | 2 75 @ 3 00 |
| Mustard, Trieste Seed..... | 2 75 @ 3 00 |
| Mustard, Wild Brown..... | 2 00 @ 2 25 |
| Flax..... | 1 65 @ 1 90 |

| | Per lb. |
|--------------------|---------------|
| Canary..... | 2 1/4 @ 2 3/4 |
| Rape..... | 2 1/4 @ 2 3/4 |
| Hemp..... | 2 3/4 @ 3 1/4 |
| Alfalfa, Utah..... | 5 1/2 @ 6 |

Bags and Bagging.

No change to record in the condition of this market. There is practically nothing doing and not much reason to anticipate any great amount of business for several weeks to come. Quotable values remain in same position as at date of previous review.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, buyer July..... | @ |
| Calcutta Grain bags, 22x36, spot..... | 5 1/2 @ 5 3/4 |
| State Prison bags, per 100..... | 5 40 @ |
| Wool sacks, 4 lb..... | 30 @ |
| Wool sacks, 3 1/2 lb..... | 27 @ |
| Gunnies..... | 10 @ |
| Bean bags..... | 4 1/2 @ 4 3/4 |
| Fruit sacks, cotton..... | 5 1/2 @ 6 1/4 |

Hides, Pelts and Tallow.

Market for Hides is showing a decidedly healthy tone, values being higher than last quoted, with demand at ruling figures sufficient to absorb all offerings. Pelts do not lack for custom, and are not likely to drag for some time to come. Tallow is being favored with a moderately firm market, quotations continuing as before.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|--|-------------|-----------|
| Heavy Steers, over 56 lbs..... | 10 @ 10 1/2 | 9 @ 9 1/2 |
| Medium Steers, 48 to 56 lbs..... | @ 9 1/2 | @ 8 1/2 |
| Light Steers, under 48 lbs..... | @ 9 | 7 1/2 @ 8 |
| Heavy Cow Hides, over 50 lbs 9 @ 9 1/2 | @ 9 1/2 | @ 8 |
| Light Cow Hides, under 50 lbs @ 9 | @ 9 | @ 8 |
| Wet Salted Kip..... | @ 10 | @ 9 |
| Wet Salted Veal..... | @ 10 | @ 9 |
| Wet Salted Calf..... | @ 11 | 9 @ 10 |
| Dry Hides..... | @ 16 | @ 13 |
| Dry Kip and Veal, 11 to 16 lbs..... | 14 @ 15 | @ 11 |
| Dry Calf, under 4 lbs..... | 18 @ 20 | 16 @ 17 |
| Horse Hides, large..... | 2 25 @ 2 75 | |
| Horse Hides, medium..... | 1 50 @ 2 00 | |
| Horse Hides, small..... | 25 @ 50 | |
| Colts' Hides..... | 25 @ 50 | |
| Pelts, long wool, per skin..... | 90 @ | 1 30 @ |
| Pelts, medium, per skin..... | 70 @ | @ 90 |
| Pelts, short wool, per skin..... | 40 @ | @ 70 |
| Pelts, shearing, per skin..... | 15 @ | @ 30 |
| Deer Skins, best summer..... | 25 @ | @ 30 |
| Deer Skins, good medium..... | — @ | @ 20 |

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| | |
|------------------------------|------------|
| Deer Skins, thin winter..... | @10 |
| Elk Hides..... | 8 @10 |
| Tallow, good quality..... | 3 @ 3 1/4 |
| Tallow, No. 2..... | 2 @ 3 1/4 |
| Goat Skins, perfect..... | 20 @ 3 1/4 |
| Goat Skins, damaged..... | 10 @ 20 |
| Kid Skins..... | 5 @10 |

Honey.

Former values remain in force and no material changes are anticipated in the near future. There are advices of considerable Honey still remaining in the interior. Receipts for the season up to January 1st were 6850 cases, as against 3500 cases for the previous year, and 9500 cases two years ago. Shipments since July 1st aggregate 6400 cases, and in 1896 were 2000 cases, while in 1895 shipments aggregated 7000 cases.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 4 1/2 @ 5 |
| Extracted, Light Amber..... | 3 1/2 @ 4 |
| Dark Tule..... | 1 1/2 @ 2 1/4 |
| White Comb, 1-lb frames..... | 7 1/2 @ 9 1/4 |
| Amber Comb..... | 4 @ 6 |

Beeswax.

While there is no lack of demand, buyers refuse to advance bids beyond the range of values current for some time past. Purchasing is mostly for export.

| | |
|---------------------------|---------|
| Fair to choice, 1-lb..... | 22 @ 24 |
|---------------------------|---------|

Live Stock and Meats.

Market for Beef shows no quotable decline, but trade has been light since the holidays, and was not what could be termed brisk the preceding week. Mutton was not in heavy supply, but no large quantities were required to satisfy the demand at the comparatively stiff prices which have been lately current. Hogs which were desirable for packing, fat stock of medium to large size, met, as a rule, with prompt custom at full current values.

| | |
|---|---------------|
| Beef, 1st quality, dressed, net 1-lb..... | 6 @ 6 1/4 |
| Beef, 2d quality..... | 5 1/2 @ 6 |
| Beef, 3d quality..... | 5 @ 5 1/2 |
| Mutton—ewes, 6 @ 6 1/4; wetters..... | 6 1/4 @ 7 |
| Hogs, hard grain fed, medium..... | 3 1/2 @ 3 3/4 |
| Hogs, small..... | 3 1/4 @ 3 1/2 |
| Hogs, large bard..... | 3 1/2 @ 3 3/4 |
| Hogs, soft and feeders..... | 3 @ 3 1/4 |
| Hogs, country dressed..... | 4 1/4 @ 4 1/2 |
| Veal, small, 1-lb..... | 6 1/2 @ 6 |
| Veal, large, 1-lb..... | 6 1/2 @ 7 |
| Lamb, 1-lb..... | 7 @ 8 |

Poultry.

One of the noteworthy features of the week was the wide range of prices for Turkeys, especially on the day prior to New Years. Choice dressed were in active request early in the day at 17 @ 18c and some poor stock sold at 16c. In the afternoon the market broke under free receipts, and before the close of the day fine dressed were obtainable at 15c, some fair going at 12 1/2c. Since then the market for Turkeys has ruled dull, with a weak tone. Market for old chickens showed steadiness, but demand most of the current week was slow. Continued liberal receipts of Eastern operated against sellers of home product for nearly all kinds of old fowls. Choice young stock was in light receipt and brought very good prices.

| | |
|------------------------------------|-------------|
| Turkeys, dressed, 1-lb..... | 14 @ 16 |
| Turkeys, live hens, 1-lb..... | 12 @ 12 1/2 |
| Turkeys, live gobblers..... | 11 @ 12 |
| Hens, Cal., 10 doz..... | 3 50 @ 5 00 |
| Roosters, old..... | 3 50 @ 4 00 |
| Roosters, young, (full-grown)..... | 4 50 @ 5 00 |
| Fryers..... | 5 00 @ 5 50 |
| Broilers, large..... | 5 00 @ 5 50 |
| Broilers, small..... | 3 50 @ 4 50 |
| Ducks, young, 10 doz..... | 4 00 @ 5 00 |
| Ducks, old..... | 4 00 @ 5 00 |
| Geese, 1 pair..... | 1 50 @ 2 00 |
| Goslings, 1 pair..... | 1 50 @ 2 00 |
| Pigeons, Old, 10 doz..... | 1 00 @ — |
| Pigeons Young..... | 1 25 @ 1 50 |

Butter.

While the market shows an easier tone, there is no likelihood of prices dropping to low or unprofitable levels for some time to come, at least not for the next sixty or ninety days. Indications of liberal rains throughout the State at an early day, and the arrival of considerable Eastern butter, combined to depress values slightly from the rather stiff figures established during the holiday period. Stocks are light, however, and that there will be any heavy accumulations during the next two or three months is wholly improbable.

| | |
|-------------------------------------|-------------|
| Creamery extras, 1-lb..... | 31 @ 32 1/4 |
| Creamery firsts..... | 28 1/4 @ 30 |
| Creamery seconds..... | 27 @ 28 |
| Dairy select..... | 27 @ 28 |
| Dairy seconds..... | 24 @ 25 |
| Dairy, soft and weedy..... | 24 @ — |
| Mixed store..... | 14 @ 16 |
| Creamery in tubs..... | 25 @ — |
| Pickled roll..... | 25 @ 27 1/4 |
| Dairy in tubs..... | 23 @ 24 |
| Firkin, Cal., choice to select..... | 22 @ 23 |
| Firkin, common to fair..... | 17 @ 20 |

Cheese.

Market is quiet, and for all descriptions, other than a little extra mild and fancy new, is favorable to buyers. Supplies of held cheese are of very fair proportions for this time of year, both domestic and imported product.

| | |
|-----------------------------------|-----------------|
| California fancy flat, new..... | 11 @ 12 |
| California, good to choice..... | 10 @ 11 |
| California, fair to good..... | 9 @ 10 |
| California Cheddar..... | 10 1/4 @ 11 1/4 |
| California, "Young Americas"..... | 11 @ 12 1/4 |

Eggs.

There are no heavy supplies on the market, but with trade slow, and with both buyers and sellers anticipating lower values in the near future, there was naturally a lack of firmness. Arrivals of domestic showed a moderate increase, but importations of Eastern have ceased. It is likely eggs will be forwarded from this center to Eastern points during the early spring months.

| | |
|---|---------|
| California, select, large white and fresh..... | 20 @ 30 |
| California, select, irregular color & size..... | 26 @ 28 |
| California, good to choice store..... | 23 @ 25 |

| | |
|--|---------|
| California, common to fair store..... | @ — |
| Oregon, prime..... | @ — |
| Held Eastern, as to section and grading..... | 15 @ 21 |
| Local Cold storage eggs..... | @ — |

Vegetables.

There were fair receipts of early spring vegetables from the Los Angeles section, and prices for the same were at a lower range than preceding week, but there was room for a decline without bringing values to unprofitable levels. Onions were not in heavy stock and were held a little higher than last quoted, with market especially firm for thoroughly sound and uncut.

| | |
|---------------------------------------|---------------|
| Asparagus, 1/2 lb..... | 12 1/2 @ 25 |
| Beans, String, 1/2 lb..... | 6 @ 9 |
| Beans, Lima, 1/2 lb..... | @ — |
| Beans, Refugee, 1/2 lb..... | @ — |
| Beans, Wax, 1/2 lb..... | @ — |
| Cabbage, choice garden, 100..... | 50 @ — |
| Cauliflower, 1/2 doz..... | 85 @ 75 |
| Corn, Green, 1/2 sack..... | @ — |
| Corn, Alameda, 1/2 crate..... | @ — |
| Cucumbers, Alameda, 1/2 box..... | @ — |
| Egg Plant, 1/2 lb..... | 12 1/2 @ 15 |
| Garlic, 1/2 lb..... | 2 1/2 @ 2 1/2 |
| Mushrooms, Buttons, 1/2 lb..... | @ — |
| Mushrooms, Wild, 1/2 lb..... | @ — |
| Okra, Dried, 1/2 lb..... | 12 1/2 @ 15 |
| Onions, Yellow, good to choice..... | 2 25 @ 2 50 |
| Onions, Yellow, cut..... | 1 50 @ 2 00 |
| Peas, Sweet, Garden, 1/2 lb..... | 3 @ 6 |
| Peppers, Green Chile, 1/2 lb..... | 8 @ 10 |
| Rhubarb, 1/2 box..... | @ — |
| Squash, Summer, 1/2 lb..... | 6 @ 8 |
| Tomatoes, Bay, 1/2 box..... | 30 @ 60 |
| Tomatoes, Los Angeles, 1/2 crate..... | 60 @ 90 |

Potatoes.

While no radical changes in values were developed, the tendency was in favor of sellers. Spot stocks are not heavy, neither are receipts of large proportions. Prospects are favorable for the market ruling tolerably firm during the balance of the season, especially for choice to select qualities. Sweet potatoes at about same range last quoted, with no noteworthy scarcity of supplies.

| | |
|-------------------------------------|-----------|
| Early Rose, River, 1/2 cental..... | 50 @ 65 |
| Peerless, River..... | @ — |
| Reds River..... | 50 @ 60 |
| Garnet Chile, Mission..... | @ — |
| Burbanks, Salinas..... | 70 @ 1 00 |
| Burbanks, River..... | 50 @ 75 |
| Burbanks, Petaluma and Tomales..... | @ — |
| Burbanks, Oregon..... | 60 @ 90 |
| Garnet Chile, Oregon..... | @ — |
| Sweet River, 1/2 cental..... | 40 @ 50 |
| Sweet Merced..... | 60 @ 85 |

The Fruit Market.

Fresh Fruits.

The display of deciduous fresh fruits has dwindled down to small proportions. Aside from Apples, Pears and Persimmons, the market is virtually bare. Apples comprise the principal stock, the other two varieties named being in too light supply to admit of wholesale trading. Apple market has not shown much activity the current week, partly due to the fact that offerings were mostly under choice. Inferior qualities were being crowded to sale by numerous receivers, and met with little custom from other than street hawkers, the latter dictating low figures and refusing to operate on other than their own terms. High grade Apples, choice to select in every respect, met with fair custom at tolerably good figures, especially as compared with prices at which some of the seriously faulty stock sold for. Fancy qualities of Virginia Greenings, 4-tiers to the box, were quotable at \$2.25 @ 2.50 per 60-lb. box. Select Spitzenberg and Newtown Pippins, as well as other equally desirable stock, brought in some instances a moderate advance on quotable rates. Pears were mostly more or less faulty, and market for same dragged in consequence. Choice Winter Nellis commanded fully as good figures as previously quoted, but inferior stock was even more difficult to place than poor Apples. Persimmons moved slowly, with prices at a rather low range, few consumers having been yet cultivated up to an appreciation of this fruit.

| | |
|--|-------------|
| Apples, Spitzenberg, 4-tier, per box..... | 1 00 @ 1 25 |
| Apples, choice Newton Pippin, 4 tier, 1/2 box..... | 75 @ 1 00 |
| Apples, good to choice, 50-lb box..... | 50 @ 1 00 |
| Apples, common to fair, 1/2 box..... | 20 @ 40 |
| Apples, Bellflower, 1/2 50-lb. box..... | 40 @ 70 |
| Quinces, 1/2 box..... | @ — |
| Figs, Black, 2-layer box..... | @ — |
| Pears, Common, 1/2 box..... | 25 @ 50 |
| Pears, Winter Nellis, 1/2 box..... | 50 @ 90 |
| Persimmons, small box..... | 25 @ 50 |
| Strawberries, large, chest..... | @ — |

Dried Fruits.

Some improvement is observable in the market for cured and evaporated fruits, more in the matter of tone than in quotable values, although for some kinds prices are ruling more favorably to sellers than previously quoted, notably Prunes and Pitted Plums. Stocks of Prunes in this center have been lately reduced materially, and there is now little attempt made to furnish the four sizes, local stocks not permitting of so doing to any noteworthy degree. There are probably not to exceed 500 carloads of Prunes now remaining in the State, most of these being in the Santa Clara valley, and last-named stock is steadily held on the basis of 2 1/2c for the four sizes. Odds and ends remaining in other portions of the State are obtainable about 1 1/2c per pound less. Pitted Plums are in light supply and are mainly in strong hands. Any changes in values for this variety in the near future are more apt to be to firmer than easier figures. Market for Apricots of choice quality is against buyers. In fact, large orders for last-named description cannot now be filled. Values for Peaches are being well sustained at last quoted range, with supplies mainly in the hands of jobbers. Market for all other good to choice fruit is showing steadiness, and if anticipations for spring trade are realized, a pretty thorough clean-up of all kinds will then be experienced.



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| EVAPORATED OR BLEACHED. | |
|--|---------------|
| Apricots, Royal, in sacks, per D..... | 5 1/2 @ 6 |
| Apricots, Royal, fancy..... | 6 1/2 @ — |
| Apricots, Moorpark..... | 7 @ 9 |
| Apples, in boxes..... | 6 1/2 @ 6 3/4 |
| Figs, fancy pressed..... | 8 @ 10 |
| Nectarines, White..... | 4 1/2 @ 5 |
| Nectarines, Red..... | 4 1/2 @ 5 |
| Peaches, unpeeled, choice..... | 4 1/2 @ 5 |
| Peaches, peeled, in boxes..... | 6 @ — |
| Peaches, unpeeled Bartlett's, halved, fancy..... | 7 @ 8 |
| Pears, halved, unpeeled Bartlett's..... | 4 1/2 @ 6 |
| Pears, quartered, unpeeled Bartlett's..... | 4 @ 5 |
| Pears, peeled and sliced..... | @ — |
| Plums, pitted..... | 4 @ 5 |
| Prunes, in sacks, 40-50's..... | 1 1/2 @ 5 |
| 50-60's..... | 3 1/2 @ 3 3/4 |
| 60-70's..... | 3 @ 3 1/4 |
| 70-80's..... | 2 1/2 @ 2 3/4 |
| 80-90's..... | 2 @ 2 1/4 |
| 90-100's..... | 1 1/2 @ 1 3/4 |
| Above figures are on basis of 2 1/2c for 4 sizes. | |
| Prunes in boxes, 1/2c higher for 25-lb boxes, 1/4c higher for 50-lb boxes..... | 2 1/2 @ — |
| 4 sizes Santa Clara and equal..... | 2 1/2 @ — |
| 4 sizes San Joaquin and Northern..... | 5 @ 8 |
| Prunes, Silver..... | 5 @ 8 |

COMMON SUN-DRIED.

| | |
|-------------------------|-----------|
| Apricots, ordinary..... | 4 @ 5 1/2 |
| Apples, sliced..... | 3 1/2 @ 4 |
| Apples, quartered..... | 3 1/2 @ 4 |
| Figs, Black..... | 2 @ 3 1/2 |
| Figs, White..... | 3 @ 4 |
| Peaches, unpeeled..... | 3 @ 4 |
| Plums, unpitted..... | 1 @ 1 1/2 |

The following review of the dried fruit market in New York came by recent mail:

There has been little change in apples during the week. Evaporated have had a fair inquiry from both jobbers and exporters, and desirable grades have been held with confidence at full late prices. Sun-dried also in light supply and held steadily, with some holders asking a fraction more than quoted. Chops quiet and rarely exceeding \$3 @ 3.50. Cores and skins sold mainly at \$2.25 @ 2.50. Small fruits have a moderate inquiry at about former prices. California fruit quite firm under a fair demand, though values show no material change.

| | |
|--|------------|
| Apricots, Cal. Moorpark, 1897, per lb..... | 9 @ 11 |
| Apricots, Cal. Royal, 1897, per lb..... | 6 @ 8 1/2 |
| Peaches, Cal. 1897, peeled, per lb..... | 14 @ 18 |
| Peaches, Cal. 1897, unpeeled, per lb..... | 5 1/2 @ 10 |
| Pears, Cal. 1897, per lb..... | 5 @ 10 |
| Prunes, Cal. 1897, per lb..... | 3 @ 8 |

Raisins.

A generally better tone is reported in the Raisin market, with stocks showing steady reduction, and values for desirable qualities inclining against buyers. About 1000 carloads are now reported on hand in the State, but it is doubtful if over a third of these are of prime quality. Eastern dealers are carrying few Raisins, and are expected to draw on this market tolerably freely during the next few months.

F. O. B. FRESNO DELIVERY.

| | |
|--------------------------------------|-------------|
| Imperial Clusters, per box..... | @ — |
| Dehesa Clusters, per box..... | @ — |
| Fancy Clusters, per box..... | @ — |
| Boxes, London layers, 20-lb box..... | 1 00 @ 1 10 |

(Usual advance for fractions.)

| | |
|--------------------------------------|---------------|
| Loose Muscatel, 4-crown, 1/2 lb..... | 4 @ — |
| Loose Muscatel, 3-crown..... | 3 1/4 @ 3 1/2 |
| Loose Muscatel, 2-crown..... | 2 @ — |
| Sultanas..... | 3 1/4 @ 4 |
| Seedless Muscatel..... | 2 @ 2 1/2 |
| Dried Grapes..... | 1 1/2 @ 2 |

Citrus Fruits.

As the weather has moderated since last review, Oranges have been in better request, but the demand has not been sufficiently active to cause better prices to prevail. For best Navels, however, the market was firm at the quotations. Lemons were not in heavy receipt, but were in more than ample supply for immediate needs. Limes were less plentiful than when last quoted and market was firmer.

| | |
|-----------------------------------|-------------|
| Oranges—Navel 1/2 box..... | 1 25 @ 2 75 |
| Seedlings..... | 75 @ 1 50 |
| Lemons—Cal., select, 1/2 box..... | 2 00 @ 2 25 |
| Cal., good to choice..... | 1 00 @ 1 50 |
| Cal., common to good..... | 50 @ 1 00 |
| Limes—Mexican, 1/2 box..... | 3 00 @ 4 00 |
| Cal., small box..... | 50 @ 1 00 |
| Grape fruit, 1/2 crate..... | 2 50 @ 4 00 |

Nuts.

Almonds are said to be cleaning up fairly well the past week or two. Present offerings are mainly odds and ends. Inquiry is mostly for papershell. Walnuts are still in good supply and market is devoid of firmness, although quotations are without change.

| | |
|--------------------------------------|---------------|
| California Almonds, paper shell..... | 6 1/2 @ 7 |
| California Almonds, soft shell..... | 4 1/2 @ 5 |
| California Almonds, hard shell..... | 2 1/2 @ 3 1/4 |
| Walnuts White, paper shell..... | 6 @ 6 1/2 |
| Walnuts White, soft shell..... | 6 @ 6 1/2 |
| Walnuts White, Cal., standard..... | 5 @ 6 |
| Chestnuts, Cal. Italian..... | 7 @ 8 |
| Peanuts, Cal., fair to prime..... | 4 1/2 @ 5 |

| | |
|-----------------------------------|-------|
| Peanuts, Eastern hand-picked..... | 5 @ 6 |
| Pine Nuts..... | 7 @ 8 |

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------|--------------------|----------------------|
| Flour, 1/4-sks..... | 54,322 | 2,577,014 |
| Wheat, cts..... | 241,061 | 7,168,590 |
| Barley, cts..... | 24,855 | 3,470,548 |
| Oats, cts..... | 14,122 | 402,076 |
| Corn, cts..... | 15,825 | 182,340 |
| Rye, cts..... | 22,373 | 116,011 |
| Beans, bks..... | 17,568 | 407,836 |
| Potatoes, sks..... | 15,078 | 608,040 |
| Onions, sks..... | 2,126 | 70,279 |
| Hay, tons..... | 1,383 | 77,038 |
| Wool, bales..... | 29 | 48,399 |
| Hops, bales..... | 87 | 6,935 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------|--------------------|----------------------|
| Flour, 1/4-sks..... | 51,192 | 1,675,612 |
| Wheat, cts..... | 273,491 | 6,821,360 |
| Barley, cts..... | 8,270 | 2,532,008 |
| Oats, cts..... | 103 | 9,826 |
| Corn, cts..... | 1,887 | 24,991 |
| Beans, bks..... | 5,148 | 242,107 |
| Hay, bales..... | 4,401 | 46,064 |
| Wool, bales..... | 12,727 | 6,698,112 |
| Hops, bales..... | 530 | 618,104 |
| Honey, cases..... | 169 | 6,398 |
| Potatoes, pkgs..... | 1,656 | 150,750 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, January 5.—California dried fruits: Apples firm; other fruits quiet and steady. Evaporated Apples, common, 5 @ 7c; per pound; prime wire tray, 8 @ 10c; wood dried prime, 8 1/4 @ 9 1/4c; choice, 9 1/2 @ 10c; fancy, 9 @ 9 1/4c. Prunes, 3 @ 4c per pound. Apricots, Royal, 7 @ 8c; Moorpark, 6 @ 11c. Peaches, unpeeled, 7 @ 10c; peeled, 12 @ 20c.

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Patrons of Husbandry.

Tulare Not Favorable to Farmers' Clubs.

At the last meeting of Tulare Grange the Secretary read a communication from Bro. G. W. Worthen, Worthy Master of San Jose Grange, in which he took occasion to approve resolutions of Tulare Grange on the organization of local farmers' clubs, as discussed at the State meeting of horticulturists.

This brought a further discursive consideration of the subject, which shows the general conclusions of the members to be that there must be a State organization for effective work; that without this local organizations are futile; that the methods suggested of farmers' clubs maintaining places of meeting, open all the time for business meetings and social intercourse of farmers' families while in town, is, first, undesirable as entailing more expense than farmers are willing to assume, and, second, that for a place where farmers' families can meet socially and have the benefit of the papers and periodicals of the day the free reading rooms and circulating libraries now maintained by nearly every little town will answer a much better purpose.

That co-operation amongst farmers in selling and buying is one of the great needs of the day, but that no farmers' organization can better serve such a purpose than the Patrons of Husbandry, with its National, State and subordinate Granges, now working faithfully and untiringly in the farmers' cause, and that this organization can and will do more, if the farmers are only true to themselves and their farmers' organization; if they will better co-operate with and support, from a sense of duty and patriotism, the Patrons of Husbandry.

It is the rule of Tulare Grange to consider, from an educational and patriotic standpoint, matters of public interest, carefully ignoring such subjects as are partisan. On these lines the Grange has taken deep interest in good roads, how to make and how to keep them, and on agricultural education, from the primary school to the university. Mindful of this educational feature of the Grange, the Worthy Lecturer said in the near future he will ask the Grange consideration of a course of agricultural home reading, such as is now proposed by the College of Agriculture, West Virginia; of the U. S. postal savings law now before Congress, and of the primary election law of California, now assailed by political bosses and hacks.

Bro. Shoemaker, Worthy Steward of the State Grange, said he had been invited to install the officers of Stockton and sister Granges at joint installation and had accepted the same. The Brother was requested to convey the fraternal greeting of Tulare Grange to the Granges he will then meet with, wishing them a very happy New Year and each and every member health and prosperity.

J. T.

Anniversary Celebration at Sacramento.

The thirtieth anniversary of the foundation of the P. of H. was duly celebrated last month by Sacramento Grange with a feast of formal literary and musical exercises.

W. W. Greer, Master of the State Grange, in his address, spoke of the enormous increase of membership since, thirty years ago, seven farmers met and organized the first grange. Now it numbers its members by the hundreds of thousands, New York State alone having 100,000, and Pennsylvania nearly as many. He gave an interesting account of the work done by the National Grange at its meeting last year, and said that he found the different States were working along different lines of Grange work.

Pennsylvania and Ohio, he found, were working thoroughly along the line of co-operation and had derived

great benefit from co-operation, both in buying and selling, and their members are well satisfied with the results achieved. In the New England States, on the contrary, the work is along the social lines of Grange work and a regular programme of education is being carried out, attention being paid mainly to literary and kindred educational matters.

Other States work along other lines, but all in the road of progress. He found, further, that the Grange has won profound respect of outsiders throughout the East by its conservative methods and its sticking to the lines on which it was projected.

Following there was an interesting programme of songs, recitations, etc., in which the ladies of the Grange were the chief actors.

Two Rock on Direct Legislation.

Two Rock Grange (Sonoma Co.) has adopted the following resolution and asks all other Granges in California to give the subject consideration:

Resolved, That Two Rock Grange favors "direct legislation;" that it sees in it the means of purifying politics, of destroying the lobby, of simplifying elections, diminishing partisanship, educating the people by forcing them to think of public measures, knowing they will themselves be directly responsible for good as well as had laws, and last, though not least, our legislators will be our servants and not our rulers; and be it also

Resolved, That Two Rock Grange will not favor any candidate for legislative office, no matter of what party, who will not pledge himself to do all in his power to bring about "direct legislation." That it will use its influence to induce its neighbors and the part of the public it comes in contact with to carefully study the advantages or disadvantages of "direct legislation" and compare it to the advantages and disadvantages of the present system of indirect legislation. And be it further

Resolved, That copies of these resolutions be made public in our local and Grange press, and each subordinate Grange of the State be requested to co-operate with us in causing this question to be agitated.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING DECEMBER 21, 1897.
595,845.—CARPET STRETCHER—Ansley & May, Davenport, Wash.
595,737.—CHOPPING BOARD—J. B. Biles, Elma, Wash.
595,761.—BROOM—H. Brockmann, Santa Rosa, Cal.
595,830.—CIGAR BOX—C. A. Coey, Fairfield, Wash.
595,700.—VEHICLE WHEEL—J. T. Davis, S. F.
595,806.—ENVELOPE—S. M. Edwards, Los Angeles, Cal.
595,875.—TENT—J. W. Ernest, Los Angeles, Cal.
595,715.—WAGON—G. G. Kaiser, Johnson, Wash.
595,778.—SPRINKLER—E. A. Knoop, Monterey, Cal.
595,915.—FUSE CUTTER—E. A. Langford, Washington, Cal.
595,886.—STOP COCK LOCK—R. B. Mullen, Tacoma, Wash.
595,919.—WATER ENGINE—W. R. Phillips, Seattle, Wash.
595,788.—BENZINE APPARATUS—Small & Stillman, Sacramento, Cal.
595,793.—WATER PURIFIER—H. Stillman, Sacramento, Cal.
595,750.—INSECT EXTERMINATOR—C. Zimmerman, Santa Rosa, Cal.

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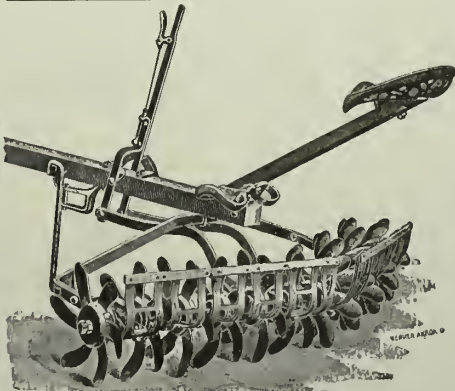
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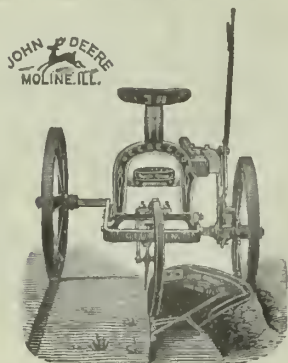
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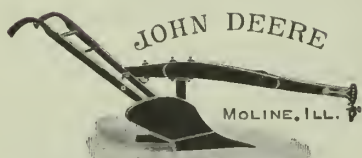
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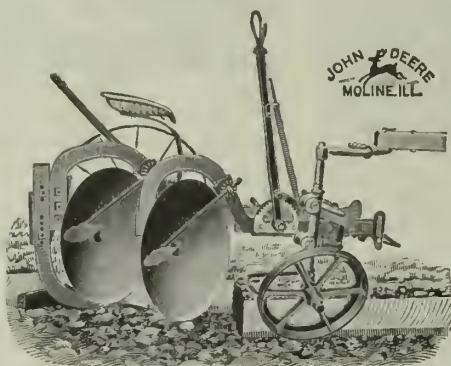
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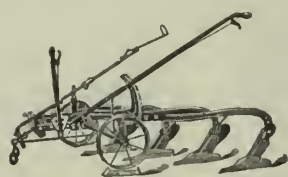
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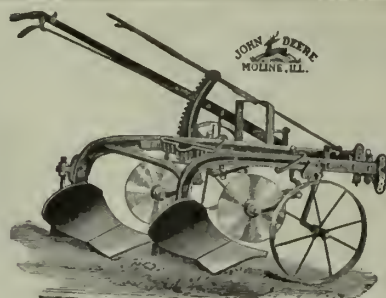
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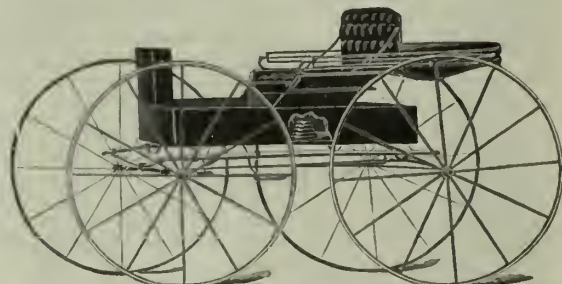
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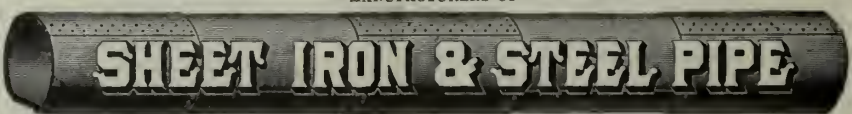
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AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 3.

SAN FRANCISCO, SATURDAY, JANUARY 15, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

In a Private Garden.

It will interest many readers of the RURAL to have a glimpse in the garden of Prof. Emory E. Smith, of Palo Alto. Prof. Smith is widely known as an ardent lover of plants and as a horticulturist, in esthetic and ornamental lines especially. He has resided in several parts of California, and has labored for the advance of California floriculture through his long term as secretary of the State Floral Society, and otherwise. About three years ago, Prof. Smith began the development of a home place at Palo Alto, and it is a part of this which the photographer has caught in his picture. It is an excellent illustration of two things: one is that it does not require a large place to produce a certain freedom and largeness of effect. One would be apt to conclude from the picture that the grounds shown must extend over acres of space, whereas in fact the whole premises cover only about half an acre. This is accomplished by the skill which Prof. Smith has shown in his laying out. He has myriads of plants of all kinds in his garden. We doubt if any similar area in the State, unless it be a florist's saleyard, which has such a varied collection of plants in such numbers, and yet, instead of impressing the visitor as a jungle or a saleyard, it gives the impression of spaciousness, as we have said. Another lesson of the place is the speed with which effects can be produced in California. By the use of somewhat mature specimens of palms and other trees, and by choice of quickly growing foliage plants, a few months will, in California, produce the effect of a well-established and time-honored garden. Of course, this can be done to a certain extent in colder climates, by the summer planting out of winter protected plants; but in the best of such efforts the newness and unfitness of the affair is never fully concealed. In California, transplanted growths take almost at once to their new situation and begin active growth, and this behavior almost at once constitutes them established plants as though to the manner born.

Prof. Smith's collections of plants include many



SCENE IN THE GARDEN OF PROF. EMORY E. SMITH, PALO ALTO.

rare and interesting specimens, and his exhibits at the meetings of the State Floral Society are always unique and attractive.

In the Squash Field.

The squash is another of the great vegetables of California. Nearly every member of the great squash family thrives in California, and at some of

our State fairs exhibits have been made by squash fad-ists including at least a hundred varieties of all sizes, forms and colors—from the tiny gourd to the monstrous prize pumpkin with a certified weight of above 300 pounds. Certainly it is a great country for the amateur cucurbitist to delight his fancy in and it also affords an exceptional chance for scientific study of the squash, for the long growing season and other conditions favoring development are here enjoyed to perfection.

The features of the squash proposition which delight most people, however, are the sizes which are secured and the prolificness of the vines, which result in a great acre-yield. The picture on this page, which is reproduced from our new book on "California Vegetables," shows a characteristic California squash field, in which the fruits lie so thickly that one can in many cases cross the field without touching the ground. For such a yield as this a good, rich and amply moist soil is necessary. The picture was taken in the famous squash region of Arroyo Grande valley in San Luis Obispo county, but the "squash belt" is a pretty long and pretty wide affair in California. All along the coast, where there are deep, rich soils, and in the hot interior valleys as well, if there is moisture enough naturally or by irrigation, the squash attains immense size, producing vast amounts of stock feed.



VIEW IN A SQUASH FIELD IN ARROYO GRANDE VALLEY—FROM "CALIFORNIA VEGETABLES."

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ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, January 15, 1898.

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The Week.

Weather and Crops.

The great variety in the current weather supply and the extremes of temperature realized are doing very much to allay the anxiety about sufficient water for crop purposes. Roadside observers all agree, so far as we have heard, that the intense cold we have had and the freedom with which snow has been blown over the face of the State are not marks of a dry year, and that a season which is capable of such pranks will have no trouble in nearly drowning us with rain as soon as it gets ready. The disposition, then, is to wait and to hope for all that can be desired.

The snow has been the weather sensation of the week at all points from the citrus groves of southern California northward. In some places such an amount of snow has not been known for a decade, and in some places quite enough rain for present use has fallen during the week. The situation is, therefore, more promising than recently, and a good general downpour of warm rain would reassure everybody.

The following data for the week ending 5 A. M. Wednesday, Jan. 12, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Rainfall Date. | Total Seasonal Rainfall Last Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature Week. | Maximum Temperature Week. |
|----------------------|------------------------------|----------------------|---|------------------------------------|---------------------------|---------------------------|
| Eureka..... | .92 | 16.40 | 22.50 | 19.69 | 30 | 52 |
| Red Bluff..... | .18 | 6.26 | 11.50 | 12.20 | 26 | 60 |
| Sacramento..... | ..... | ..... | ..... | ..... | ..... | ..... |
| San Francisco..... | .68 | 4.75 | 11.10 | 10.73 | 36 | 57 |
| Fresno..... | .21 | 2.11 | 4.17 | 4.52 | 26 | 64 |
| San Luis Obispo..... | .83 | 2.40 | 7.96 | 7.25 | 24 | 62 |
| Los Angeles..... | 1.14 | 3.75 | 5.48 | 7.25 | 36 | 64 |
| San Diego..... | 1.00 | 2.75 | 4.30 | 4.00 | 36 | 64 |
| Yuma..... | .17 | 1.06 | 2.54 | 1.89 | 32 | 72 |

Another Movement for a Dairy School.

At the regular meeting of the Regents of the University of California on Tuesday of this week, Regent Denicke moved that \$10,000 be appropriated from the next budget to establish and maintain a dairy department in connection with the College of Agriculture. He remarked that the value of the dairy output of California for the year 1896 was \$13,000,000. Figures for 1897 were not available, but the regent was confident that the value of the output was largely in excess of that of the previous year.

The topic was discussed for some little time, and

then the whole subject matter was referred to a committee consisting of Regents Chase, Denicke, Marye, Mrs. Hearst and the President of the University.

On the evening of the same day the San Francisco Farmers' Club met to consider the same proposition. J. B. Burdell and William H. Roussel read papers on the subject, treating of the advisability and feasibility of the project, and pointing out the benefit that would result to those who were engaged in dairy or farm work. The subject was informally discussed after the papers had been read, there being no opposition to the idea.

The Produce Markets.

The San Francisco wheat market has "eased off" a little as to prices during the week, spot quotations running less by 25c per ton than at our last writing. The cause, as nearly as it can be traced, is that there is more offering than the immediate English market will take. Nobody looks upon the decline as significant, and as usual when things get into this condition there is little business doing. The only interesting local fact in connection with wheat is that another ship is loading for South Africa. Among those best informed there is no faith in this proving a permanent market for California grain. This season's export grows out of the fact that Australia is short and so calls upon us to supply her customers.

The dried fruit market continues demoralized as to prices, though there is more and more inquiry from Eastern buyers. Consigned goods have been sold down at prices which holders here are unwilling to match, and of course this makes a dull situation. Whether the condition is so bad as to spoil the whole season nobody can tell; but there are some who think so. On the part even of strong holders there is manifest, as the season wears on, an eagerness to sell, and this fact is not without its influence. Still there are many firm holders confident of the future.

In the general produce market there is not much change. Dairy products are cheaper, hogs are higher, hops are looking up and hay is booming. For particulars see our market report.

Raisin Situation at Fresno.

The following is taken from the Fresno *Expositor* of 10th inst. and represents the local hopeful view of the situation:

During the past week or more there has been considerable inquiry for raisins, and while it is not known that any delivery or sales have been made, the prospect is good for sales resulting at an early date. The prices ranging this morning were 2 cents for 2-crown, 3½¢ for 3-crowns and 4½¢ for 4-crown raisins.

While it is conceded that the growers have been holding back their produce, the fact is, notwithstanding, that up to Jan. 1st 2600 cars of raisins have been shipped to the East from Fresno, when at this time last year only 2500 cars had been sent. The crop proved to be a larger one than estimated at the picking season. While it is definitely known how much of a stock the packers have handled to date, it is guesswork how much has been held back by the raisin growers. The estimates are that they have from 500 to 800 carloads awaiting unloading on the market.

A remarkable feature in connection with the market is the one that there is practically no demand for Seedless Sultanas and Thompsons. This is attributed to the fact of the seeded raisin being in the market. At any rate, this is the belief entertained from the conditions of the market. It is remembered that when the seeded raisin was put on the market about the middle of last September, the Seedless dropped in price about fifteen days after from 5½¢ to 4 and 3½¢ cents a pound, with few offerings and little demand, while the price of the seeded product has kept up stiffly from 7½¢ to 8½¢ cents a pound.

The commission men and packers declare that the seedless raisin has been practically driven out of the market by the other article, and they comment upon this as a remarkable feature, considered as the result of only one season.

Another Development of the Combined Harvester.

The Holt Manufacturing Co. of Stockton, well known as among the largest and most progressive makers of agricultural machinery on this coast, and especially in connection with important improvements in the combined harvester, have just received letters patent upon what is called the "Single Wheel Harvester." This invention is described by Messrs. Dewey, Strong & Co., the patent agents, as follows:

It relates to a novel apparatus for cutting, threshing, separating and cleaning grain in a continuous process by means of a machine which is adapted to travel over the field while carrying on the operation. What are known as "traveling harvesters" have usually been constructed by mounting a threshing machine upon four wheels and hinging to one side of it, a large triangular horizontal frame having a reciprocating cutter bar at the front to reap the grain, a horizontal traveling belt or draper behind the cutter upon which the cut grain falls, which draper carries the grain to and delivers it into the feed house, from which it passes to the threshing cylinder and thence through the usual cleaning mechanism. The difficulty with this class of machines lies in the fact that, as the threshing machine portion is supported upon four wheels, it must, unless some provision is made for leveling it, necessarily tilt from side to side as the machine passes over irregular and uneven ground, and this throws the grain to one side or the other of the cleaning mechanism and makes the separation and cleaning very irregular and imperfect. In this new construction the threshing machine has a single large bearing and driving wheel journaled nearly centrally inside the frame

and a steering wheel approximately in line with it at the front, so that the threshing machine is carried upon these two wheels in line with each other. When it is properly connected with the header frame, this connection will prevent it from tipping over. The connection between the two consists of a rack bar or equivalent bracing arm, one end of which is movable, so that the header frame inclines upwardly or downwardly in passing over uneven surfaces. The threshing machine can, by means of this connection, always be maintained nearly or quite vertical. Various mechanisms may be employed to make the connection between the two and to adjust it so as to keep the threshing machine level.

This form of machine was used with much success during the past season in hilly sections, and will be in great demand during the coming season where a medium weight machine is required.

The company has for some years been building a larger machine for the same purpose, in which the threshing machine has a large bearing wheel upon each side. These wheels are mounted in vertically movable frames, and by means of a connected operating mechanism one wheel may be raised and the other depressed, to keep the threshing machine level upon the steepest hillsides which can be worked. Many of these machines have been in successful use in Oregon, Washington, Idaho and Montana, as well as in California, and Mr. Benjamin Holt has recently made a visit to the great grain producing sections of Russia, with a view to introducing the improved machinery in that country.

The Bag Supply at San Quentin.

At the last meeting of the State Prison Directors Warden Hale made a report upon the bag supply and the amount of jute on hand and ordered as follows:

Number of grain bags on hand, 2,247,500; number held for shipment on orders from last year, 135,500; number of bags available for sale, 2,112,000; raw jute on hand and in warehouse, 2180 bales, which will run the mills until about April 10, 1898; jute contracted for to arrive, 8000 bales on ship *Eclachean*, out from Calcutta seventy-one days, and 1000 bales per December steamer from Calcutta via Hongkong.

Condensing Milk in Orange County.

The manufacture of condensed milk in California has undergone various vicissitudes, but has proceeded in spite of competition with large importations from the Eastern factories. An interesting account of the operation of the establishment in Orange county is given by the *Anaheim Gazette*:

"The Pacific Creamery at Buena Park is a very busy place. A force of twenty-four employes are kept constantly engaged in condensing and sterilizing from 7000 to 8000 pounds of milk daily, which is delivered in the early hours of the morning. The milk is produced by some eighty farmers, who own choice dairy herds in the neighborhood of Buena Park and Norwalk. The wagons drive up to the creamery and deliver the milk to the weigher, where it is weighed and tested, the payment for it being made upon the quantity of butter fat it contains, and 22½ cents per hundred being allowed for the skimmed milk. The milk is conducted into large copper reservoirs, where it is heated with steam to a temperature of 115°, after which it is taken to the vacuum pan and subjected to further boiling. Five thousand pounds of milk are taken into the vacuum pan at each charge, and this quantity is reduced to about 1000 pounds. The milk remains in the vacuum pan for two hours, and can be seen through the glass in a seething, flaky mass, churned into fury by the steam pipes that coil about the interior.

"After being subjected to the condensing process for a couple of hours the milk is conducted by pipes into the cooler, where artesian water playing upon the pipes cools the milk sufficiently to permit of its being taken to the packing room. Here it is placed in cans by the aid of machinery, and the cans sealed airtight. The milk, which a few hours before was fresh from the dairy, now goes back in the cans to the processing boiler for the sterilizing process. The cans are kept in the processing boiler, in constant motion, the globules of butter fat revolving for about two hours. The heat is maintained at a temperature of 230°.

"Thence it goes to the refining rooms, where it remains for five weeks before it is ready for the market. During this term of five weeks, if any 'bloaters,' or bad cans, are about, their presence is speedily made known, and they are withdrawn before the cans are sent to the labeling and polishing room. Here the cans are neatly polished, labeled and boxed, and are ready for shipment.

"The creamery imports tinware by the carload, and 4000 cans are made daily. The establishment will shortly be lighted with electricity, a contract for the installing of a dynamo having been let, and it is the purpose to run the creamery night and day. The creamery is 1600 cases behind orders now, and each case contains forty-eight cans. The condensed milk is shipped to Australia, the South Sea Islands, Turkey, Mexico, South America, as well as domestic points, Denver, Colo., being a heavy consumer.

"The factory is putting up a new warehouse, 24x60, uses a carload of oil every thirty days, and has a pay roll of \$3000 per month.

"The stockholders and officers are: Jonathan Bixby, Long Beach, president; Charles F. Bixby, Buena Park, vice-president; George H. Bixby, Long Beach, and Mrs. Rebecca F. Bixby, of Buena Park.

Note and Comment.

FOREIGN DRIED FRUIT TRADE.—The trade in California dried fruits on foreign account during this season has been so widely distributed and the export has been through so many channels that nobody has been able to keep accurate reckoning of it. A special difficulty lies in the fact that quantities of goods bought ostensibly for the New York and other Eastern markets have been passed on to Europe—to what countries and in what quantities nobody knows. But from such reports as the *RURAL* has been able to give from time to time during the course of the shipping season, it is evident that the movement has been very large. All the counties producing prunes and apricots have shared in it, and from Santa Clara, Sonoma, Solano, Sacramento and Fresno the export has been notably an important feature of the season's business. Santa Clara, naturally, has been the leading direct shipper of prunes to foreign markets, and the figures from July 1st to Jan. 1st, as we find them reported in the *San Jose Herald*, are as follows:

| Destination. | Prunes, Lbs. | Destination. | Prunes, Lbs. |
|-------------------|--------------|------------------|--------------|
| London, Eng. | 2,010,160 | Rotterdam, Hol. | 493,875 |
| Liverpool, Eng. | 245,975 | Copenhagen, Den. | 17,339 |
| Hamburg, Ger. | 1,508,140 | Glasgow, Scot. | 67,880 |
| Bremen, Ger. | 310,670 | Winnipeg, Man. | 144,250 |
| Helsingfors, Ger. | 57,240 | Toronto, Can. | 138,985 |
| Berlin, Ger. | 9,200 | Montreal, P. Q. | 146,370 |
| Antwerp, Bel. | 508,769 | | |
| Paris, France. | 111,830 | Total | 6,922,000 |
| Havre, France. | 1,007,085 | | |
| Bordeaux, France. | 24,050 | | |

These figures are instructive in many ways. It will, we imagine, surprise many to learn that the chief customer in Europe for Santa Clara prunes (and the proportion may be assumed to hold as related to the shipments from other localities in the State) is England, her takings for the season aggregating 2,256,135 lbs. Germany, which is usually supposed to be the chief market in Europe for California fruits, comes second and has taken 1,885,250 lbs. of Santa Clara prunes since July, while France took 1,142,965 lbs.

It is hardly to be expected that we shall be able, every year, to repeat the success of 1897 in the foreign fruit trade, since the season's demand was to a considerable extent the consequence of a shortage in the European crops. France, for example, which has recently drawn heavily against the California supply, is usually a large exporter instead of a buyer, and next season we may meet her as a competitor in both the English and the German markets. But a great beginning has been made; the reputation of our goods has been established, and it is the opinion of market experts that hereafter we shall find more or less sale for California cured fruits in Europe. Whether it shall be more or less depends to a considerable extent upon ourselves, as has recently been very fully explained by Mr. Filcher, late commissioner for California to the Hamburg exposition.

RURAL DELIVERY A FAILURE.—In the forty and more rural districts in the United States in which the project of free postal delivery has been experimentally tested, there is but one in which it has proven even approximately satisfactory. In the district of which the town of Campbell is the center, the conditions are declared by the Postal Department to be "ideal;" and the reason is not far to seek. It is the very heart of the Santa Clara prune belt; the population is relatively large, with dwellings in close proximity; the roads are perfect and the members of the community are universally well-to-do and exceptionally intelligent. But even under these conditions rural delivery does not pay, as the postal authorities reckon it. The test thus far has covered 44 routes in 29 States, and up to Dec. 1st \$24,000 had been expended. A total of 836,308 pieces of mail matter have been collected or delivered, at a cost of 1.68 cents each. In other words, the Government simply paid out more money for the pleasure of performing this service than it received in postage, and this without taking into consideration the cost of the previous handling and transportation of this rural mail matter. In some places the cost to the Government was as much as 4 cents for the collection or delivery of a piece of matter, whereas the postage on it may have been only 1 cent, or at the most but 2 cents. The free rural delivery in one district in Maryland, for example, cost 2.88 cents per piece collected or delivered, and in not a single instance in any of the States has the service paid for itself.

Under these circumstances the officials of the Postal Department think it inexpedient to further pursue the experiment, although there still remains

in their hands upwards of \$60,000 of the \$90,000 originally appropriated by Congress for that purpose.

In England the mails are delivered in the country as well as in the cities, but England has its 30,000,000 of population combined within 50,000 square miles, while our 70,000,000 are distributed over 2,000,000 square miles of settled country.

BEET BUYING AGAIN.—With reference to the current discussion as to method of buying beets Prof. Paul Sukey contributes an article to the *Louisiana Planter* recommending a method (originating in Germany) in which both sugar and purity are used to determine the value. The sugar is multiplied by the purity, and a coefficient of value is thus established. This method of purchasing beets, Prof. Sukey states, would make contracts fair and equitable. A writer in the *Pajaronian* thus comments on Prof. Sukey's proposition: "I have had considerable experience in making beet contracts during the past ten years, and I agree with the learned professor that the method he recommends, if also based on a sliding scale of sugar values, would be as nearly perfection as we could arrive at. For myself I would like to see such a plan adopted, and when every beet farmer shall be as highly educated as Prof. Sukey we shall buy our beets that way. But the hard knocks of experience have taught us that if you would have a steady supply of beets, which is the first factor in the successful conduct of a factory, you must offer to the farmer a plain, simple contract, whose terms are expressed in language understandable of the common people, whom it is said the Lord must love, since he made so many of them. The farmer knows nothing of and cares nothing for such things as 'purity and coefficient'; he is suspicious of their introduction into a contract, and this suspicion will disturb the harmonious feeling that should be established between the factory and the producers of the raw material. To get what it wants from the farmer it must offer to the farmer something that he wants, and just now the farmer wants a flat price, with no percentage of sugar or coefficient of purity trimmings."

Weather and Crops.

SUMMARY OF THE REPORT OF THE U. S. WEATHER SERVICE FOR THE WEEK ENDING JANUARY 11, 1898.

General Summary.

The long delayed rain came on the 6th, 7th and 9th. The amount of rainfall, however, was generally below what might have been expected at this season of the year, except in the southern part of the State. In the northern portion the rainfall is below the normal for the week by amounts varying from 0.35 to 1.40 inches. South of the Tehachapi the rainfall has exceeded the normal. The week ends with cold, dry weather. The temperature has been about normal, or little above, except in the extreme northern portion. Frosts occurred north of the 35th parallel on the morning of the 8th and heavy or killing frosts on the 9th and 10th. Grain needs rain badly, except in the southern sections, where the rain has caused the grain to sprout and started the grass. There is a very general expression of opinion that a good soaking rain is much needed. Some snow has fallen in the southern mountains. Oranges are being picked and shipped, but the rainy weather will retard shipments a little.

SHASTA.—Weather cold, with heavy frosts.
GLENN.—Need rain badly for growing grain.
BUTTE.—Cold north winds. Olives that are unpicked show marks of frost.

COLUSA.—Grain is badly in need of rain.
YOLO.—Light rains Saturday evening, followed by heavy north winds. Ground very dry; more rain is needed. Pruning all done.

SOLANO.—Winter plowing finished. Summer fallow doing well. Saturday's rain very beneficial; more needed. Heavy frosts night and morning. No damage.

EL DORADO.—No damage from frost. Clear and cold.
SACRAMENTO.—Good rainfall followed by severe frost and north wind.

SAN JOAQUIN.—Two good rains. Plowing and seeding on low lands still in progress.

STANISLAUS.—Some rain. Farmers resumed plowing. No damage from frost. Summer fallow all in.

MERCED.—Rain fell past week over six-tenths of an inch, which will improve feed for stock. Heavy frost.

KERN.—Fine soaking rain. Grain coming up nicely.

FRESNO.—Light showers at Huron. Light rains at Fresno have improved condition of ground somewhat. Cold weather, with heavy frosts.

KINGS.—No rain yet at Armona.
TULARE.—More than half an inch of rain fell the past week; enough to start grain.

YUBA.—Farmers still seeding. An increased acreage of wheat this winter.

SONOMA.—The light rain of last week was of great benefit to this county. Grain all in; an average acreage.

ALAMEDA.—Farmers busy plowing. Late rains beneficial.

SANTA CLARA.—Last rain started plowing. More rain needed.

SANTA CRUZ.—Rain was beneficial. Prospects good.

SANTA BARBARA.—Only a trace of rain during last week. Rain badly needed.

LOS ANGELES.—(Bassett).—One inch of rain during past week. Ground in good condition for seeding, which will be pushed rapidly.

(Duarte).—About one inch of rain has fallen. Oranges and lemons doing well. (Palmdale).—Snowing Saturday and this morning.

Precipitation small but probably enough to sprout the grain. (Pomona).—Raining and cold. (Los Angeles).—Sufficient rain has fallen to start plowing.

VENTURA.—Cloudy, with snow on the mountains. Very little rain in the valleys. Oranges and lemons safe to date.

ORANGE.—Splendid rains, with indications favoring a continuance.

RIVERSIDE.—Rains during latter part of week have been of great benefit to grain-growing districts, but will curtail orange shipments to some extent in the coming week. Traces of snow last night. No damage to fruit or trees. Still raining.

SAN DIEGO.—The rain did much good in sprouting the grain that was already sown; it also started the grass and made irrigation unnecessary for the days on which the rain fell. Oranges are coming rapidly into market.

THE CITRUS FRUIT TARIFF.—The *Los Angeles World* says: "A correspondent suggests that theorists may argue that the 'cent a pound' duty has not helped us. Well, let us smile. The foreign lemons afloat December 18, 1896, were 147,350 boxes. The foreign lemons afloat the same date this year are 34,350—just one-fifth. Smile again! The amount of oranges afloat December 18, 1896, were 99,300 boxes; foreign oranges afloat same date this year, 1800 boxes. Smile again! Market at good, high level range of prices, too. Smile again! All this in spite of a great reduction in steamer freights, which are now about 20 cents a box from Sicily. Smile again; take courage!"

AGRICULTURAL REVIEW.

CALIFORNIA.

Butte.

LOOKING TO BEET GROWING.—A Chico letter of 10th says: "Report has become current here, and it is from good authority, that the renters of the Walsh and Pinnell ranches in Glenn county have been instructed not to summer-fallow any lands this coming year. There were no explanations given, but those who have kept abreast with the times expect great realizations in the near future for Butte, Colusa and Glenn counties. A few weeks ago Eastern capitalists secured bonds on some of the best lands of several of the largest ranches in these counties and intend erecting sugar factories this coming season. This is why there will be no grain raised on these particular lands the coming year, but instead beets will be planted and cultivated."

THE NORTHERN CITRUS BELT.—It is now ten years since orange planting began here for commercial purposes. Year by year the number of trees increased, and at the present time many are fairly in bearing. This year the shipments from Oroville, Palermo and Thermalito will be fully 125 carloads. As these oranges ripen early, we need fear no competition with those from southern California. Even if those from the south are sent to the same market, the richer color, the brighter appearance and the sweeter flavor of the Butte county oranges will always hold the market. Many of the trees planted within a few miles of this town have not yet come into bearing. As the seasons go by from the increased acreage and the added number of trees that come into bearing, it is certain that the number of carloads we produce will be increased. By 1900 we may expect at least 500 carloads from the three localities named above. The number of orange trees will steadily increase and the time is coming when the shipments from Butte will be very large.—Oroville Register.

Los Angeles.

THE OLIVE HARVEST.—The picking of olives has about been completed; and though the crop was light, the large acreage of young orchards has given a greater bulk of the fruit than was ever before harvested. Capt. Thatchers, who has been in the business of picking olives for a number of years, says the quality of the fruit this year is exceptionally good, and that one of the most favorable features is the ready market found for pickled olives in the East, where almost the total pack is being sent. Previous experience has shown that every keg of olives sent East brings orders for a number more the next year, and it is believed the result of this year's sales will be a heavy demand next year.—Pomona letter.

Monterey.

FARMING BY SYNDICATE.—Mr. B. F. Gould has formed a syndicate to farm 200 acres of land near Soledad. The tract is under irrigation, and will be planted to alfalfa. The syndicate rents for the first year, with the privilege of purchase at \$100 per acre, the purchase price being payable in ten annual installments. Among those in the syndicate are M. T. Dooling, E. E. Holbrook, A. M. Hardin, Rody Shaw, Thos. Plint, Jr., and Joseph H. Lynn.—Advance.

RAIN SPECULATION.—Although there is yet plenty of time for an abundant rainfall, yet, until it does come, our people will be in a very anxious frame of mind. On our fourth page to-day will be found a table of the rainfall at Salinas every month during the past 26 years. This season's rainfall to date is 3.11 inches. Glancing over the figures in the table, we find that the season of 1877-8, with a total of 28.83 inches, had only 3.51 inches up to January 1st; 1881-2, with a total of 12.93 inches, had 2.27 inches up to January 1st; 1883-4, with a total of 20.25 inches, had 2.53 inches up to January 1st; 1893-4, with a total of 14.20 inches, had 2.46 inches up to January 1st; 1895-6, with a total of 12.82 inches, had only 2.18 inches up to January 1st. So, judging from the past, there are good grounds for believing that we shall have plenty of rain before the winter is over. The table which we publish will enable our readers to make comparisons for themselves. A falling barometer last night was a favorable sign.—Salinas Index, Jan. 6th.

Napa.

SUGAR BEET PROPOSITION.—An agent has been in Sonoma county, to the west of us, and in Solano county, to the east of us, contracting for sugar beets. He represents the California Beet Sugar and Refining Company, established at Crockett; offers \$4.25 to \$5 per ton for beets, price depending upon percentage of sugar in the beets, and says for the company that it will furnish seeds at low rates, and will sell or rent, on reasonable and easy terms, drills, cultivators and other appliances that may be needed for putting in, cultivating and harvesting the crop. During the season of planting, growing and harvesting, an expert will visit all those with whom the company has contracts, to furnish information and suggestions which will aid the farmer to realize the best results for his labor. In this industry Napa is interested. The soil of our valley has been tested, and found adapted to sugar beet culture.—Register.

MONGOLIAN PHEASANTS.—The California Fish and Game Commissioners have designated Oak Knoll Farm, four miles north of Napa, as one of the localities in which to turn loose a number of Mongolian pheasants. The birds, nine of them, arrived from Oregon Monday, addressed to Drury Melone, Oak Knoll, with these instructions from Deputy Fish Commissioner David F. Macy: "Let them out of the box as soon as possible. In doing so loosen a board so that they can come out of their accord. Place a little wheat around the box. Sometimes they come back at night until they get settled. If you let them out all at once they will scatter in every direction, for they are naturally a wild bird. I think they will do well in your county, if they are protected until they get a start." Mr. Melone will undertake to give the birds the needed start, and has prohibited shooting on his large land holdings.—Register.

San Bernardino.

CHINO BEET LANDS.—Mr. Hache has been busy at Chino for some weeks past allotting the sugar company's land. Only two-thirds of their leased land will be contracted for beets, the other third being allowed to rest for a year. Green fertilizer will be used on the land so resting, the company furnishing free seed to be used for this purpose. Mr. Hache says, according to the *Champion*, that he has found that leguminous plants are not suited for this purpose on land containing much alkali, as the latter burns the plants out before they make a growth. He had tried peas, clover and lupines, all of this class, and all with the same result. A plant closely allied to our wild mustard, he believes, will give results, and will try it largely this year. It is the company's intention to adopt a regular system of rotation of the beet crop with some green fertilizer of this kind, cropping the land to beets only two years out of three.

The Redlands Orange Growers' Association, which embraces in its membership many of the prominent growers of Redlands and vicinity, has decided by unanimous vote to retain in the association the price of fancy Navels at \$2.25 a box.

Santa Clara.

FARMERS' CLUB AT SAN JOSE.—One hundred farmers in this county have signed the roll of membership of the Farmers' Club of Santa Clara Valley, and next Saturday at a meeting in Hale's Hall a constitution and by-laws will be adopted and

officers elected for the ensuing year. * * * The specific objects of the club are: First, to promote the best interests of farming in all its branches, with a view to making the same profitable and to obtain and diffuse to members important information; second, to sustain farmers' institutes or the extension of University work to the farmers; third, to establish a headquarters, open and free to every member on every business day of the year, for the convenience of members; fourth, to promote acquaintance and interchange of ideas, encourage concert of action and inspire mutual confidence.—San Jose Mercury.

FRUIT SHIPMENTS FOR 1897.—The shipments from the Santa Clara valley for 1897 break all records. The prune yield goes above the productions, being 52,004,290 pounds. The following statement shows the shipments from San Jose for the calendar year 1897 as compared with those during 1896:

| Overland Shipments— | 1896. | 1897. |
|------------------------|------------|------------|
| Canned goods..... | 12,364,055 | 15,234,780 |
| Green apples..... | 1,665,315 | 8,456,900 |
| Green apricots..... | 1,000 | 1,000 |
| Green cherries..... | 1,250,300 | 3,273,719 |
| Green grapes..... | 903,560 | 1,638,170 |
| Green peaches..... | 1,490,775 | 2,281,040 |
| Green pears..... | 6,485,275 | 3,630,950 |
| Green plums..... | 1,135,465 | 2,152,680 |
| Green prunes..... | 49,015 | 630 |
| Green quinces..... | 186,940 | 366,600 |
| Dried prunes..... | 39,142,285 | 52,004,290 |
| Dried peaches..... | 2,822,945 | 2,681,140 |
| Dried apricots..... | 1,967,890 | 8,305,985 |
| Dried pears..... | 259,910 | 276,145 |
| Dried plums..... | 24,580 | 273,295 |
| Dried raisins..... | 6,740 | 5,150 |
| Other dried fruit..... | 38,400 | 28,150 |
| Wine..... | 9,024,250 | 11,102,475 |
| Garden seed..... | 773,330 | 2,062,720 |
| Leather..... | 925,645 | 879,525 |
| Wool..... | 101,430 | 195,150 |
| Beans..... | 4,165,580 | 5,991,655 |
| Beer..... | 312,900 | 890,425 |
| Potatoes..... | 171,000 | 285,950 |
| Almonds..... | 108,160 | 111,670 |

The increase in dried prunes for the past seven years is shown in the shipments; from 1890 to 1897 inclusive, the shipment of prunes has been as follows: 11,205,765, 19,212,265, 14,464,340, 30,555,250, 17,286,380, 35,129,870, 32,535,340, 46,728,830. In each case the figures are from July 1st to December 31st only; the figures are in order. The present season's shipment of dried apricots is nearly double that of the prunes' best year, 1894, when about four and three-quarter million pounds were shipped.—San Jose Herald.

Santa Cruz.

SANTA CRUZ APPLE CROP.—It is estimated that not less than 100 carloads of apples for the European market will be accredited to Santa Cruz county this season. More apples have been shipped from Watsonville to England this winter than all of California has forwarded to that country during preceding years. The Newtown Pippin from this county has touched the critical taste of people in Great Britain who can and will pay for an article which suits them.—Pajaronian.

Sonoma.

FARMERS' FIRE INSURANCE CO.—A Santa Rosa letter of 10th inst. says: "This afternoon the Farmers' Mutual Life Insurance Co. completed its organization by the election of the following directors: D. M. Winans, S. T. Coulter, John Strong, James Moran, G. T. Trowbridge, H. G. Gregory, W. H. Harris, C. D. Grover, R. G. Sutherland, J. G. Stevens and C. F. Bruggeman. Already \$52,000 of the capital stock has been subscribed."

CLOVERDALE CITRUS FAIR.—At Cloverdale preparations are already under way for the forthcoming citrus fair. The crop is earlier than usual, and the directors plan holding the fair before the middle of February, for then the winter's sun will have changed the starch in the fruit to sugar and they will be in their prime. A number of improvements have been made to the pavilion, including the building of a stage which is so situated that the acoustics of the hall are greatly improved. Commenting on the coming fair the Santa Rosa Republican says: "Never has there been a better crop to the tree of oranges, limes, lemons and olives, and never have there been so many trees in bearing. The trees are vigorous and unharmed by scale."

Tulare.

THE SAN JOAQUIN CITRUS BELT.—W. Ramsay, orange grower of Lindsay, in an interview with the Fresno Republican last week, spoke as follows: "The citrus belt along the Sierra Nevada foothills in Fresno and Tulare counties offers many advantages to those who wish to engage in orange and lemon growing. Our golden fruit is free from scale and of fine quality. The oranges ripen early in the season and we secure the top prices when the market is bare. There is also an abundance of water for cheap irrigation. The frosts have not injured the orange or lemon groves in the vicinity of Lindsay or Porterville. The crop was nearly all picked and shipped before the cold snap. The young groves seem to be thrifty and unaffected by the cold weather. The orange groves in the vicinity of Lindsay are young, and this year we shipped only fourteen carloads of fruit. Next year we expect to ship 150 carloads of oranges and lemons. There are 1500 acres in orange trees in that vicinity. When the trees come into full bearing the output of oranges will be great. Sixty-five carloads of oranges were shipped from Porterville the present season, and next year many of the young orchards will come into bearing and the output will be greatly increased. The orchards in the vicinity of Lindsay are irrigated with water raised by pumping plants. J. J. Cavins was the first to try this method of irrigation. In 1892 he quit wheat farming and planted 100 acres in orange trees. There were no irrigation ditches, and he erected a large pumping plant and irrigated from wells. The plan was so successful that a large colony of people have located in that vicinity and followed his example. The orchards are irrigated from three to five times every year, and the cost for water is from \$3 to \$4 an acre. A 12 H. P. engine will pump enough water to irrigate five acres a day. The fuel costs \$150 and an engineer is paid \$1.50 a day."

Yuba.

BEETS WANTED.—The Marysville Appeal reports that the California Beet Sugar and Refining Co. have applied to the farmers in Yuba and Sutter counties to supply beets for the Crockett factory. They agree to pay for all beets delivered at any railroad station or boat landing next nearest the place where said beets are grown (said place of delivery to be designated by the party of the first part within thirty days prior to time of harvesting said beets) as follows: Four dollars per ton for beets containing 15 per cent of sugar to the weight of the beet, in addition to which a premium of 25 cents per ton will be paid for every full degree of sugar above 15 per cent, making the contract price for beets containing 19 per cent of sugar \$5 per ton. A corresponding reduction in price will be made on all beets containing less than 15 per cent, making contract price for beets containing but 13 per cent of sugar \$3.50 per ton. Fractional parts of a degree are not to be considered in either premium paid above or discount made below \$4 per ton. Beets containing less than 10 per cent of sugar will not be received. The party of the first part reserves the right to reject very large beets, or those mostly grown above ground, or diseased beets unfit to be manufactured into sugar, or those beets exposed too long to the sun's rays after having been pulled out, or beets whose coefficient of purity shall fall below 80, when their sugar contents is less than 12 per cent.

HORTICULTURE.

Citrus Fruit Culture.

By I. N. HOAG of Redlands at the Fruit Growers' Convention in Sacramento.

In this brief paper, to be read and discussed by experts in fruit growing and handling, I shall endeavor to bring to the front a few suggestions on the general subject of citrus fruit culture and its development as a commercial industry in California, rather than dwell on technical points of culture and management of the nursery and orchard by the beginner. The latter knowledge or art, though of great importance to individual and general success, is quite simple and can be gained more satisfactorily and thoroughly by careful observation and by experience in the field than by reading and discussing even the best written directions on the subject.

Limit of the Industry.—There are orange and lemon trees growing in nearly all of the counties of the State not exclusively in the mountainous sections, and many of these trees are bearing more or less fruit of very fair quality. For climatic reasons, however, the citrus fruit industry is and must be confined to a belt of country lying among the foothills of the Sierra Nevada mountains. This belt is called the thermal belt. It stretches from San Diego to Tehama county, a distance of over 700 miles, and varies in width from three to four miles to twenty-five or thirty. In this belt it is estimated there are about 1,500,000 acres of land adapted to the safe cultivation of citrus fruits on a commercial basis.

The altitude ranges from 300 to 1800 feet above sea level. The mean summer temperature of this belt is somewhat higher in the northern portion than in the southern, but the mean winter temperature is higher in the southern than in the northern portion. The mean temperature for the year does not vary more than four degrees throughout the whole belt. The warmer temperature in the northern section during the growing season favors the earlier ripening of the fruit, while the warmer winter temperature in the southern section favors a safer and more general development of the industry.

Especially Favorable and Dangerous Localities.—All along this belt of country there are especially protected or favored localities, and also localities where it would be unsafe to attempt citrus fruit culture as a commercial enterprise. This is caused by the local topography of the country and does not depend much on the altitude. Wherever cold currents of air from high altitudes flow to the valley without interruption, it will not be safe to attempt citrus culture at any elevation within the sweep of these currents. On the other hand, wherever these descending currents are cut off or turned aside by spurs of the mountains, leaving the warm atmosphere of the days undisturbed during the nights, there orange and lemon culture may be engaged in without danger from frost. In other words, the eddies of air currents must be selected and the main flow of these currents must be avoided.

Everyone who has traveled along these Sierra foothills parallel with the valleys, particularly in the winter season and at night, will recall his surprise at the sudden changes of the temperature of the atmosphere within short distances. He may also remember to have noticed tender plants and shrubs seared and frost-bitten, while just over a ridge or cone the same plants or shrubs were in full leaf and growing luxuriantly. Want of attention to these facts has caused many a disastrous failure in the cultivation of citrus fruits in California.

It may be here observed that these peculiar natural phenomena are more striking and their lessons are more imperative north than south of the Tehachapi pass, for the reason that south of that point the coast range of mountains is broken up into fragments, and the tempering influences of the waters and breezes of the ocean are more direct and powerful than farther north, where this range is practically unbroken and the citrus belt is farther inland. These disadvantages of the northern section are, however, somewhat counteracted by the fact that the dryer and warmer summer atmosphere is a greater guarantee against the spread and damages of insect pests. The more elevated inland localities in the south have this same advantage over localities nearer the coast.

History of the Industry.—From the best information obtainable, some oranges were planted in the Mission San Gabriel, Los Angeles county, in the year 1804. The nucleus of orange culture in California was formed in this place and about the above date by Padre, or Father, Sanches.

The second trees were planted in Los Angeles by Don Louis Vignes in 1834. Several other small plantings followed about that date, but no orchards were planted with a view to selling the fruit till the coming of American people to California.

The historic orchard of William Wolfskill was the first planted with an idea of profit, and he was the subject of ridicule when it was learned by his neigh-

bors that he entertained this idea. When he died he had a bearing orchard of twenty-eight acres, and that year the fruit was sold on the trees for \$25,000.

A few trees were planted at Old San Bernardino by L. VanLeuven in 1857 from seed grown by him. He also planted the same year forty trees obtained from Los Angeles. About 200 were planted at Craf-ton by Myron H. Crafts about 1865. The first seeds were planted at Riverside in 1870, and the first trees in orchard, grown from these seeds, in 1872 and 1873. In 1869 Frank A. Kimball planted some orange and lemon trees at National City, San Diego county. At that time there were two old orange trees growing in El Cajon valley. In 1862 H. M. White planted two orange trees in Frazier valley, east of Porterville, Tulare county. The first orchard was planted in Porterville in 1883 by A. R. Henry. About the same date a small planting was made at Centerville, Fresno county. My recollection is that some time in the 60's the noted tree at Bidwell's Bar, on the Feather river, in Butte county, was planted. The seed from which this tree was grown was planted by Jesse Morrill in his garden in Sacramento. A few trees were planted in his garden by the agent of the Marysville & Oroville railroad as early as 1868, at Oroville, Butte county. Thus we find that as early as 1870 small orange groves had been planted all along the foothills from San Diego to Butte county. Plantings in many of the valley counties had also been made up to this date, but these latter have served to prove the inadaptability of the valleys to the growth of the industry, while along the foothills the small beginnings have developed into one of the most permanent and profitable branches of horticulture in the State.

While in early years the increase in planting, except in Los Angeles county, was quite slow, of late years it has been more rapid. In 1881, of official returns, the whole number of trees in the State was: Orange, 484,227; lemon, 62,130. Of these Los Angeles county had 450,125 of orange and 48,350 of lemon trees. By careful estimate the number of orange trees now in the State is about 8,000,000 and of lemon trees 1,500,000. In 1879 Los Angeles county shipped fifteen cars of oranges out of the State. In 1890 there were shipped from the State 3429 cars, mostly from three southern counties. By careful estimate we have this season to ship 12,000 cars of oranges and 1500 cars of lemons. Our receipts for oranges in 1890-'91 were \$1,796,025. This season, at the same prices, we should receive for oranges \$6,300,000 and for lemons \$675,000, a total of \$6,975,000. The shipments this season will go from thirteen counties—San Diego, Riverside, San Bernardino, Santa Barbara, Ventura, Orange, Los Angeles, Tulare, Fresno, Sacramento, Placer, Butte and Tehama.

Under Difficulties and Doubts.—This wonderful development has been made under very discouraging circumstances. In the first place, many of our own people, and especially old settlers, were very skeptical as to the possible success of the industry, and would not invest a dollar in it. In 1886, having previously satisfied myself that there was a large section of country in Tulare county especially adapted to the culture of orange and lemon trees, and prices of land being low and water abundant, I made an effort to call public attention to that section and to settle some land with a colony. I found local opinion so strong against the feasibility of the project that I abandoned the effort and located at Redlands. Although orchards were prospering and shipping excellent fruit from Craf-ton, three miles east of Redlands, and from Old San Bernardino, three miles west, and Riverside, sixteen miles down the valley, was recognized as the home of the orange, yet I found a prevailing sentiment of doubt as to the adaptability of the northern slopes and the red soil of this locality to the culture of citrus fruits.

To-day Redlands is the peer of any locality in the world in this industry, and Porterville, Linsey, Exeter, Lemon Cove and Orosi are rapidly bringing Tulare county to the front, to occupy at least the second place, if not the first, among the citrus-growing counties of the State.

The citrus fair held at Sacramento in 1886 opened the eyes of the people of the northern portion of the State to the possibilities of this industry in the northern foothill counties and paved the way for its development in the foothills of Sacramento, Placer, Butte and Tehama counties. The first difficulty, or obstacle, of the doubt and doubters, has thus by the logic of success been removed.

Foreign Competition.—The second difficulty, or discouraging circumstance, has been foreign competition. The area of country in the United States adapted to this industry is so small, compared to the area of the whole country engaged in other agricultural and horticultural industries, that we have never, until the extra session of Congress, lately adjourned, been able to attract the attention of members of Congress to the inequality and injustice of the tariff on citrus fruits, as compared with the duty on other agricultural and horticultural products.

This difficulty having been partially removed by the levying of one cent a pound on all imported citrus fruits, we began to feel that a great obstacle had been overcome. The sounds of rejoicing, however, have hardly died away when we learn that the

steamship companies have largely neutralized our anticipated benefits by a reduction on freights from Mediterranean points, from 30 to 10 cents a box. Thus transportation companies reduce their rates to encourage and maintain foreign production.

Our overland railroads sustain the same relation to the California citrus industries that the steamship companies do to those industries in the south of Europe. Will they see it in this light and reduce freights proportionately, and thus encourage the industry in California and consequently increase their East-bound business? In this connection let it be stated that orange and lemon orchards furnish the roads more freight and for longer distances than any other agricultural or horticultural product from an equal area of soil. The fruit is all shipped in the green state, while the bulk and weight of the larger portion of all other fruits are greatly reduced before shipping.

Freights to Market.—I have to some extent anticipated the third difficulty, or obstacle, the citrus fruit industry of California has to overcome to enable it to secure the greatest measure of success. We have hitherto been paying 90 cents a box freight from our orchards to Eastern markets, while our greatest competitors have paid but 30 cents to the same markets, and, as above stated, are paying now but 10 cents. How shall this third obstacle be removed, for removed it must be? The only answer is: *By the building of the Nicaragua canal.* This canal will give us water communication and water freight rates to the best markets of the world. Our California Navel orange is the peer of all other oranges. It has no competitor in the markets of the world. Give us this canal and we will occupy, not only the markets of our own country against all competitors, but we will take possession of the markets of Europe for the sale of this matchless fruit, and, to a large extent, for our citrus and deciduous fruits generally.

With these possibilities and, may I not say, prospects, ahead of them, let the fruit growers of California take courage; let them take no faltering or backward step. Let them, occupying the best fruit country in the world, push forward to secure the cheapest and best methods of transportation to all the great centers of consumption for their unequalled products.

Does the Winesap Resist the Moth?

At about the time apples were gathered, Hon. E. L. Smith, president of the Oregon State Horticultural Society, wrote an article to his local paper at Hood River, in which he threw out the hint that there might be some resistance in the Winesap apple against the codlin moth. What is the experience of California growers in this respect? He says:

"The codlin moth, as you are well aware, has done us serious damage this season and threatens to destroy, to a great extent, the value of the orchards in the future, unless efficient means are taken to check its ravages. Systematic and timely spraying, so far, has not been practical in the valley to my knowledge. Evidence, however, is not wanting that paris green, properly applied and at the right time, will insure a large percentage of merchantable apples. There is, however, difficulty in procuring arsenical preparations of sufficient strength and purity, and some uncertainty as to the proper times to apply them. If, therefore, we can find a variety that possesses, to a great degree, immunity from codlin moth, it is certainly a matter of great importance to us.

"On my Beulah Land place is a small group of old apple trees that have never been sprayed and have received but little cultivation. I gathered the winter apples from these trees a few days ago and found a large percentage of wormy fruit—Missouri Pippins, Greenings, etc. Four Winesap trees, standing in the center of the group, were singularly free from the work of the codlin moth. In other words, I have over 85 per cent of sound Winesaps, against 40 per cent of sound fruit of other varieties. These facts attracted my attention, and I hastened to make inquiries of other growers—Slingerland, Kepke, Locke, and several others—and everywhere I find that this variety is a resistant variety, to a greater extent than any other grown in our orchards, to the attacks of this pest. I believe that the fruit is so very hard that the larva of the codlin moth finds great difficulty in effecting an entrance. This apple is of medium size, an early and productive bearer, of inviting color, good quality, and an excellent keeper. It also adheres more tenaciously to the tree than any other variety I am acquainted with—a most valuable quality for this locality."

ACCORDING to a Washington dispatch, the Director of the Mint has substantial evidence that the world's product of gold for the calendar year of 1897 will approximate, if not exceed, \$240,000,000, an increase of nearly 20 per cent over 1896. The gold product of the United States for 1896 was \$53,100,000; for 1897 it will approximate \$61,500,000. The product of Africa for 1896 was \$44,400,000; returns received up to December 1, 1897, indicate that the gold product of that country for the year will be \$58,000,000. Australia, for 1896, \$45,200,000; for

THE FIELD.

Alfalfa Growing and Hay Making.*

By W. H. SHAFFER at the University Farmers' Institute at Selma.

The word alfalfa is of Arabic origin, and was in use in Spain when the plant was introduced into Mexico after the Spanish conquest, and this name went with it. The name lucern, by which the plant is known in the Eastern States, comes from an old Italian word, and not from Lucerne, one of the Swiss Cantons.

History.—Alfalfa has been cultivated as a forage plant for more than twenty centuries. It is a native of the central portion of western Asia, being found in a wild state there yet. It was introduced into Greece at the time of the Persian war 470 B. C. It was cultivated by the Romans as a forage crop for the horses of their armies, and its growth in Italy has been continued down to the present time. It was probably introduced into Spain during the Moorish control and was carried from there to Mexico and the west coast of South America. From Chile it was brought to California in the early history of the State, and has spread over the regions between the Pacific ocean and the Rocky mountains and is now cultivated therein almost to the exclusion of other forage plants.

In the San Joaquin.—Attempts to obtain a better forage plant than alfalfa have ended in failure, or worse than failure, as witness Johnson grass, which was introduced as a substitute for alfalfa in this part of the State. The consequences of this attempt are familiar to all and need no comment. The length of time that the peoples of climates and soils similar to the San Joaquin valley have cultivated this plant would seem to indicate that no better can be found for forage production; but if improvement is needed, it should be looked for not in plants of other species, but in the selection of seed to reach the end desired—either hardness or greater productiveness. Every observing farmer has noted the differences of individual plants in the same field, and growing side by side. It is just as true of alfalfa as of any other plant, tree or grain that advantage could be taken of this to improve the stock by careful selection. In the writer's opinion it is as near perfect a forage plant as it is possible to obtain for this valley.

Growth.—Alfalfa is a deep feeder and sends its roots to a depth of ten or twelve feet if moisture is not sooner reached, provided the subsoil is permeable. It will grow in any favorable soil from sea level to 7000 feet elevation. It grows best in sandy loams, such as comprise the bulk of the soils of this valley. It will not thrive on soils which contain an excess of iron. It feeds most heavily on lime, potash, magnesium and phosphoric acid. Of these elements, lime is the most essential, and when it becomes exhausted in the soil the fact is shown in the decreased yield of alfalfa. Where surface irrigation is practiced, this condition is often reached by the lime being leached out by the abundance of irrigation water used, rather than by the plant taking it from the soil. As soon as the field shows the lack of lime by decreased yield, the remedy is gypsum, which is sulphate of lime, and is in the market at a reasonable price, being mined and brought from the mountain range bounding the valley on the west, where large quantities are known to exist.

Gypsum should be sown over the field during the winter so that the rains may dissolve and wash it into the soil. Do not use stable manure for alfalfa. It will stimulate the growth, but is worth too much for the peach orchard to waste in this way. Gypsum is better, and a person never having used it will be surprised at the results of the first application. [There was some difference of opinion as to the value of gypsum disclosed in the discussions at Selma.—Ed.]

A Manure Plant.—From the preceding remarks it must not be understood that alfalfa is a crop that is exhausting to the soil. On the contrary, it is a soil renovator or soil builder. It belongs to that class of plants known as nitrogen gatherers, as the following extracts show:

The legumes, to which family alfalfa and all the clovers belong, are able to draw nitrogen directly from the atmosphere. Other families of plants, for instance the true grasses, are unable to take up any nitrogen, except such as may be in soluble form in the soil. Hence alfalfa and its relatives are the best plants that can be grown by the farmer, for they manufacture large quantities of this most valuable and expensive fertilizing element.

By raising alfalfa the farmer not only provides an excellent quality, as well as a large quantity of forage for his domestic animals, but he is at the same time enriching his fields, and doing it with a fertilizer, which, if purchased in the market, would cost a great deal of money. When this crop is plowed under, or is fed to stock, and the manure returned to the land, it supplies a large quantity of nitrogen which is especially valuable for small grains, grasses and root crops, and which the latter are unable to obtain for themselves.

Fruit After Alfalfa.—No better preparation for an orchard or vineyard can be made than to sow the

*The writer wishes to acknowledge indebtedness to the Bulletin on alfalfa issued by the Agricultural Department, Washington, D. C., for historical data and that portion of this paper in smaller type.

land for a year or two in alfalfa. In addition to the nitrogen which is added to the soil, the roots open deep holes or channels from the surface to moisture, which the tree or vine roots at once follow down, which gives a deep root system not so well attained in any other way. The percentage of nitrogen in the alfalfa plant varies considerably, being highest in the early stages of growth and least about the time seed commences to ripen. This indicates that hay should be cut not later than when the plant commences to bloom.

Irrigation.—Two methods of growing alfalfa are practiced. The general custom is to grade and check the land into squares previous to planting and grow the crop by irrigation by flooding. This is the only method practicable on most farms; and wherever the subterranean water is not near enough the surface to keep the soil above it moist to the surface. By this method alfalfa can be grown anywhere, and all waste corners and vacant pieces of land can be utilized as forage producers by the orchardist or vineyardist, it being by far the most valuable plant known for this purpose. It can be thus grown anywhere where land is farmed in Fresno county, except in a few locations near the Sierra foothills where the soils are strongly impregnated with iron.

Underflow.—By the other method land is selected for an alfalfa field so located that the subterranean moisture reaches the surface or near thereto, and the seed is sown without any preparation of the surface other than plowing and harrowing. When a stand, as it is called, is obtained on land of this character, the resulting meadow is probably more productive than where surface flooding is resorted to in irrigating. Water is applied by percolation, being run in wide, shallow ditches through the field upon the high ridges or parts. From these ditches it seeps or percolates through the soil and reaches all parts of the field.

A person purchasing land for the production of alfalfa alone should select this character of soil, where irrigation by percolation may be employed, as the first cost of preparing the land is less, the crop produced is larger and of better quality, and the field is longer lived than where surface flooding is necessary, especially if the flooded land is sandy and porous, as successive floodings gradually leach the lime, potash, etc., out of the soil. A moderate amount of alkali is no detriment.

Sowing Alfalfa.—Having made selection of the land and leveled and checked it (if it is to be flooded in irrigating), it should be plowed and thoroughly pulverized. The best condition of soil is obtained by growing an irrigated crop, the season preceding the planting to alfalfa, such as Egyptian corn or pumpkins, and planting to alfalfa the following spring. If sown broadcast, twenty to twenty-five pounds of seed should be used per acre; if drilled, fifteen or twenty pounds will do. If seed production only is aimed at, much less will do—in fact, is best—as the most seed is produced where the plants are thinly scattered over the ground.

For hay production a thick stand should be aimed at, as the hay will be finer, less woody and more nutritious than when the stand is thin. The time of seeding varies with the locality, the season being October or November for fall sowing and February to April for spring sowing. The object is to sow when there is sufficient moisture to sprout the seed and bring the young plant to the third or fourth leaf before killing frosts occur. By far the greater amount of planting is done in the spring, and the writer favors February as the time in which to plant. This will give the young plant a good start in growth before the spring moisture is dried out of the ground, and usually escapes being killed by frosts. Do not plant a nurse crop unless the land is prepared for flooding, and even then the utility of a nurse crop is very doubtful.

The writer has had best success in planting by sowing the seed upon the evenly plowed field without harrowing and then covering the seed with a brush drag. Delay irrigation until the young growth shades the ground, if possible, as the water packs the land and causes it to bake; and, when commenced, must be continually repeated throughout the entire season.

Alfalfa Hay.—The making of hay requires considerable skill to produce a first-class article on account of the nature of the plant. If the hay is stacked or put in barn before the stems are cured, it is liable to heat and mould; and, if allowed to get too dry, the leaves will all drop off and a large share of the best part of the forage will be lost. Cut when the field commences to bloom. If allowed to stand until in full bloom or after, the stems become stiff and woody and are not so fit for stock to eat. Cut in the forenoon and rake in the afternoon and do most of the curing in the windrow and shock. Handle as much as possible in the morning when the hay is damp from the night air. It is best to stack in field rather than to put at once in barn, as the hay can be put up greener without danger of heating. The art of making good hay is to be acquired by practice and observation rather than by following directions. The result to be aimed at is to stack when it is just sufficiently cured to keep without

heating and yet green enough for the leaves not to drop off.

Crop.—The number of cuttings in this county are from four to six per season. During the heated season with plenty of moisture a crop will be ready to cut every four or five weeks. When grown for seed, the second crop is the one usually saved for this purpose. The first crop does not set seed so well. The yield is variable from year to year. Probably 300 to 600 pounds to the acre is the average. The seed weighs sixty pounds to the bushel.

Pure Seed.—In buying seed, look out for weed seed, especially Johnson grass. This seed is easily seen, as it is very much larger than alfalfa and of a shining black color, long in shape, while alfalfa is yellow. Seed often contains a small, round shining black seed which is smaller than alfalfa. This is a celosia or tumble-weed seed and is harmless, except as its weight adds to the cost of the seed. The continuous mowing of alfalfa kills out this and all annual weeds and most perennials—indeed, Johnson grass is the worst thing to be feared. Pastures should be mowed at least twice a year to kill out weeds left by stock.

Value of Alfalfa Hay.—Alfalfa hay is worth as much, weight for weight, as any other hay and is eaten by all farm stock. Horses when first given this hay may take some little time to acquire a taste for it, but will not refuse it long. It is not in itself a complete ration, however. It is rich in protein—that is, in the albuminoids which, when fed to stock, produce blood, muscle, tendon and bone. It is poor in fat, sugar, starch, etc., or, technically, carbohydrates. To complete the ration when alfalfa is fed, something must be fed that contains large amounts of the latter substances to balance the protein of the alfalfa or the excess of the latter will not be digested. Such feeds as wheat hay or straw, sorghum, cornstalks and root crops are all rich in carbohydrates and poor in protein, and together with alfalfa in right proportion make a perfect ration. Alfalfa hay is especially valuable to young and growing horses, cattle and sheep, as they require a food furnishing large quantities of flesh-forming material. For work horses feed a small grain ration—barley or, better, Egyptian corn.

Bloating.—Where cattle or sheep are pastured on growing alfalfa, care is necessary to prevent hoven or bloat during cold, rainy days of spring and fall. The chance of loss from this cause is much lessened if a stack of straw or cornstalks is kept where the stock have access to it, also salt where it can always be reached by the stock is beneficial. Horses and hogs are not affected by bloat, but horses will thrive much better on the pasture with straw than without on much better pasture. Soiling—that is, cutting and feeding the cut alfalfa green—is practiced in older countries, but has not been practiced here to any extent.

For Hogs.—Alfalfa is the principal summer forage for hogs, which are extensively grown to utilize the waste on the raisin vineyards in the fall after the raisins are harvested. To get best results, the field should be divided into lots of such size that the band of hogs kept will eat off a lot in a week's time or less, when another lot is thrown open to them and the first lot closed and allowed to grow again. It should be fed off before it commences to bloom, as it then contains the most succulent food. This method gives each lot in turn a rest and a chance to grow again and will provide more forage of a better quality than where a field is continuously pastured during the summer.

When to Irrigate.—Where alfalfa is irrigated by flooding, one crop a year can be gained by flooding just before hay is cut rather than by waiting until hay is taken from the field; also there is less danger in scalding when field is shaded by the standing crop. Do not let the water stand on it over twenty-four hours. Arrange irrigation so you can shut water off in the evening rather than in the morning, so that it can soak away during the cool night and not get so warm as it will if left to soak away in sunlight. While fresh water is running from the ditch, it keeps the plat cool. It is when shut off that scalding is most likely to occur.

Enemies.—The principal enemies of alfalfa are fox-tail grass, dodder and gophers and squirrels. Fox-tail is not such an unmitigated nuisance if mowed early, as it makes a good hay for loose stock. Where the ground is moist enough to cause the grass to grow after the first cutting, the only remedy is to mow early and burn the crop without raking, which kills the grass without seemingly injuring the alfalfa. Dodder is not troublesome in this vicinity. Where patches occur in fields, it can be killed by scattering a layer of straw over and burning. Where dodder is a serious pest, it is best to screen all seed sown, as dodder seed is smaller than alfalfa and can be removed by a screen that will let it pass through and retain the alfalfa seed. Gophers and squirrels are the worst pests the Fresno farmer has to deal with. Poison or drowning by flooding are the only remedies. Smothering with bisulphide of carbon is very successful when the ground is wet.

Conclusion.—In conclusion: Do not sow alfalfa in your orchard; it will kill or render it worthless. Do

not plant every new perennial you see advertised in hope of getting something better than alfalfa. Twenty centuries' experience says it cannot be done. Remember the Johnson grass experience!

Put one of the several good horse carrier forks in your barn and another in your field on a stacking frame to save time and labor in handling the large amount of forage you raise.

THE SWINE YARD.

Home Grown Pork in Oregon.

In some respects the pork situation in Oregon is similar to that in California. Both States are largely using Mississippi valley pork products, which is altogether unwise and unnecessary. Discussion of the home grown product as given by F. E. Commons at a farmers' institute at Howell, Oregon, will be found interesting.

The Proposition.—Can we make the Oregon pig as profitable as his Eastern cousin? No doubt you are ready to answer with one voice, no. But on consideration of cholera that pervades the great corn belt and kills annually at least one-half of all their hogs, and from the fact that we have but little, if any, cholera here, and by judicious breeding and management in his feed and needs, which I will endeavor to show up farther on, I am almost ready to answer in the affirmative. A thing that is worth doing at all is worth doing well. But the Oregonians have come very near not doing it at all for the pig, but let him do himself. Root, hog, or die. So he is called the fern rooter. I will say but little about the fern rooter; I would rather talk on the bright side of the subject.

It should be a thing of the past, that in order to tell when this fern rooter is fat enough to butcher they would take him by the ears and lift him off the ground. If he balanced backward he was fat enough, but if forward he was let go. He may make a good bacon hog, but a very dear one for the farmer. They are let run and inbred at will, and that at an immature age, which will soon make scrubs of the best breeds. Start right with pure-bred stock, and they should be culled. The best are none too good. If they do cost a little more money, it will pay in the long run.

The Better Way.—What is the best? The pig that takes on fat easiest and grows fastest. They are always broad in the head and back, legs short and wide apart, a deep, mellow body, with a strong, flinty bone. Don't crossbreed nor inbreed, but keep in line with your favorite breed.

Oregon is well adapted to grow the feed to keep him healthy and grow him fast. First and best of all is clover. It will make the pig grow fast and your land grow rich. Still, it seems to be very little appreciated in Oregon; but it will find favor just as fast as farmers learn its value. I don't think any man can give an intelligent answer why he summer fallows when clover grows so well here. When it begins to head cut turn the pigs on it, and all the better if they have a lot of it to be turned under in the fall for a wheat crop. And you may expect a good one and your land made richer instead of poorer. I wonder if farmers think they can keep taking off and never putting on, and burn their straw in the bargain, and keep up the land. A seed crop of clover may be plowed under, and when it is plowed up to the surface will grow, even if it has laid there for years.

Pork Feeding.—In this way you can enrich your land. Raise more wheat and pigs and leave summer fallow in the shade. I would rather raise corn or potatoes than plow the ground all summer and leave it exposed to the hot sun. I believe corn can be made a paying crop here by enriching the land with clover. Potatoes are often too cheap to haul off, and with a furnace built on the ground, a cheap boiler filled with potatoes, a little water and salt to season, build a fire and cover the potatoes tight so that they will cook with steam, and pay no more attention to them until you are ready to feed, mash them up, with a little bran and middlings added, and the pigs will go for it without much coaxing. Alfalfa, I am told, will fatten hogs best of all grasses, and will do well in many localities in Oregon. It or clover, cut green and properly cured, is as valuable for hogs as for cows, and run through a cutter box, mixed with boiling water and shorts, will fatten almost equal to corn.

Vetches, rape, rye, wheat and oats all make good pasture for hogs. A patch of turnips is also good to turn in on in the fall. Artichokes, I am told, do well here and are fine for hogs. Pumpkins and squashes are extra feed for hogs and grow fine. We used to think in Iowa there wasn't much danger of cholera while we fed pumpkins. Rutabagas, carrots, and all root crops are good hog feed; and especially are sugar beets. They will fatten pigs fast. I have known breeders in the East when fitting pigs for the show ring to feed sugar. It will make a double curl to a pig's tail as quick as anything. A short time ago I took up forty head of shoats from the oak grubs. I had them on the acorns eight weeks and

they did fine. It is a settled fact with all the fancy swine breeders that corn is not fit to grow pigs on and should be used very sparingly until they are ready to fatten. Corn makes more grease than meat, and is very heating and breeds disease.

Healthy Food and Healthy Hogs.—They advocate wheat, rye, barley, oats, peas, bran and middlings, oatmeal, pastures—just such feeds as I have been mentioning—all of which we can grow as well as they. Sweet prunes, pears and sweet apples are as valuable for hog food as they are dried at 4 cents per pound, especially sweet prunes, which will fatten hogs very fast. It takes a great deal more feed in a cold climate to keep up animal heat than it does here. There hogs can't get a smell of grass, but in its stead a glare of ice and snow most of a zero winter. Our market is the stickler with me. Often our pork doesn't command as good a price as it does in Chicago. At the same time they are continually shipping cured meats to our markets. What is the remedy? I will offer one. Produce a good article by growing them fast so the meat will be tender. They should dress at eight to ten months old from 200 to 250 pounds. Corn, wheat or pea meal is the best to finish them up with at the last. Then, if the market doesn't suit, dress and cure them according to the very best methods, and it will always sell at a paying price.

If all our people knew as much about cholera in the East as I do they would pay a premium on our own pork production. I see no reason why Oregon should not grow her own meat at a profit. We shouldn't get overstocked, but every farmer should raise a few of the best, and they will pick up a great deal of their living that would otherwise go to waste. It costs but little to fence and shed for hogs compared with a prairie country. There could be a great deal more said in favor of Oregon as a pork producing country.

SHEEP AND WOOL.

An Oregon View of Mutton Sheep.

What can be done with mutton sheep on a Merino foundation is interesting everywhere on the Pacific coast. An Oregon grower gives the *Wool Record* his views and claims that though many articles have been written about mutton sheep, about the mutton itself not much has been said, and as the mutton is, after all, the end and aim of the mutton sheep, it might be well for breeders to look more closely into what constitutes good mutton.

The Various Breeds.—Climatic conditions and the ingenuity of man have given us many breeds of sheep, the quality of whose mutton varies no less than the quality of their wool. There are the lordly Lincolns, Leicesters and Cotswolds that will dress over 100 pounds and yield fleeces of twelve or more pounds. (A Lincoln wether killed in 1827 is said to have weighed 96½ pounds per quarter, or 386 pounds dressed.) Yet the mutton of these fine sheep is so coarse and flabby with so much tallowy fat in proportion to lean meat that no connoisseur of good mutton, or even economical housewife, will care to purchase it. Then, as the other extreme, are the scrubby-looking little mountain sheep of Wales and Kerry that will weigh but from eight to ten pounds per quarter and shear only four or five pounds of wool, but whose mutton is so delicious that epicures pay as much as a guinea or \$5 a quarter for it in the London markets. There are the curious fat-tailed sheep of South Africa, whose tail, as large as an ordinary leg of mutton, will weigh ten or more pounds. There are things they call sheep in India and Egypt, whose only title to the name is that they say "baa." There is the big-horned sheep of the Rocky mountains and his cousin the Ovis Ammon of the Himalayas, and many others. Passing these over we come to the true mutton sheep, the noble family of Downs—Southdowns, Shropshiredowns, Oxforddowns, Hampshiredowns, and others—and lastly to the great Merino family—French, Spaniard and American.

The Mutton Breeds.—All these are mutton of many different kinds and it behooves us as farmers and sheepmen to study how we can most economically put the best and most palatable mutton on the markets. The Cotswolds, Lincolns and Leicesters are magnificent sheep to look at and their splendid fleeces are of great value. They may be seen in great perfection in the rich valleys of the Shannon and Suir in Ireland. On these fine pastures the sheep are always in splendid condition and are a fine sight to a farmer's eye, but the mutton is of the very poorest quality, being soft and flabby and encased in thick, tallowy fat. Our Merino sheep here, on the contrary, yield fine-grained and juicy mutton, and, as lambs and young sheep, are good; but the older sheep, when it should be at its prime, has too pronounced a mutton flavor—in fact, too much mutton to the square inch to be palatable to most people.

The Southdown.—At the head of all mutton sheep for quality of mutton stands the Southdown and closely approaching him in quality and exceeding

him greatly in economic production of fine mutton and wool come the Shropshire and Oxforddowns. In England the value of Down mutton is well understood. It is a common sight to see in the large London butcher shops long lines of dressed mutton with their black faces and legs left on to show they are really Down sheep. The clever chef of the swell West End Club knows his patrons will appreciate a juicy saddle of Southdown; he also knows that he can make a greater and better variety of toothsome entrees out of good Down mutton than any other meat; the careful and economical housewife knows she can make a good leg of Down mutton go further with her family than perhaps any other kind of meat. American people are quick to find out a good thing, and for the right sort of mutton or anything else of the best the demand will always exceed the supply.

Shropshires and Oxforddowns.—An excellent, in fact I may say an ideal, mutton sheep that can be easily and cheaply produced by the American farmers would be the product of three or four crosses of full-blooded Shropshire or Oxford rams on Merino ewes. This would in time produce a sheep with a brown or gray face and legs and with a good, level carcass of prime, juicy mutton without too much fat. They would be good mothers of early lambs, and yield a fine fleece of middle-grade wool. In fact, the cross of Down blood will improve the quality of the mutton on any breed of sheep, the Southdowns probably being the best for the long wools and the Shropshire or Oxford the best for the Merinos.

FRUIT PRESERVATION.

Prunes and Prune Drying in Oregon.

Mr. R. D. Allen of Silverton writes for the *Portland Farmer* a conservative view of the prune situation in Oregon which will interest California producers:

The Excitement Past.—A great deal has been written and said in the past few years pertaining to prune growing in Oregon, and many of us have had a veritable prune fever. Our glowing accounts of the vast wealth hidden in the prune, only awaiting a few years for the development of the tree, have induced many of our Eastern neighbors to come here and stake out a prune lot, and the man who could not see a fortune in prunes was looked upon as a sort of pessimist. In short, the prune excitement was something akin to the present Klondike gold excitement. But the prune craze has had its day. We do not now see people tumbling over each other to get hold of a desirable prune tract. We have found out, now that our trees are in bearing, that the kernel in the pit is not pure gold, neither is the flesh free silver. We have found out, now that we have struck bedrock where the pay dirt is supposed to be, that we find only colors where we expected to pick up nuggets. We have found out that it takes about seven years from planting to get a fair crop; that a great many of the trees die before reaching this age; that it costs a great deal of money to prepare for drying or evaporating the fruit; that we are apt to encounter bad, rainy weather during the drying season, when a large per cent of the fruit will be destroyed in spite of anything that can be done, as in 1893 when a large per cent of the prunes were ruined by being cracked open, and the past season, when the excessive warm rains caused the fruit to mould and rot on the trees before it could be got into the drier. Then there are the off years when the Italian prune—the prune chiefly grown in Oregon—bears but sparingly or perhaps fails entirely, as in the year 1896.

Fresh Shipment Not Promising.—As for finding a market for prunes in the green state, experience the past season has demonstrated beyond doubt that it is altogether too risky and unprofitable. Many shipments were made the past season and the growers invariably were left in the hole. While the green fruit business may be a "puddin'" for the railroads and the commission men, the growers do not seem to fatten on the said "puddin'." In short, the adage, "all is not gold that glitters, you know," is fully exemplified in the prune business.

The Dried Product Permanent.—I do not by these remarks wish to be understood as pronouncing the prune industry in Oregon a failure. On the contrary, it is now an important industry and destined to be a permanent one. It is yet in its infancy; yet, with all the unfavorable conditions before us the past season, the dried prune crop has brought thousands of dollars into the State. True, many of us have made serious mistakes and may fail to realize our cherished anticipations, but out of these mistakes others will profit, and the requirements for the successful growing of prunes will adjust themselves to existing conditions. We have learned that in order to compete with California we have got to grow a finer and larger prune than she grows. This we can do in the Italian prune, but the question of weather in the drying season is to be considered, and we have yet to learn whether we cannot supplant the Italian

with some better variety, or, rather, with some kind that is a more regular bearer and one that will ripen earlier. It is urged by some that the Petite is more profitable for us to grow, as it bears a crop every year, and that it is a hardier tree than the Italian. My observation is that it is not a hardier tree, and the average smallness of the fruit as grown here puts it in direct competition with the cheap sun-dried product of California; but the tendency of the tree is to overbear, and unless we resort to hand thinning we can scarcely expect to produce a very large per cent of larger than 50-60 size.

The past season the Petite bore shyly in many places and the fruit was, therefore, large and fine, many running 40-50s, for which the price was about 4c net.

But with a heavy crop of this variety we can expect but a small per cent to run to this size. The average will come under what is known in California as the four sizes, or prunes running from 60 to 100 to the pound. With 40-50s at 4c this means about 2c per pound for the four sizes, and we simply can't grow them at that figure at any profit; besides, we have already reached the overproduction mark of this class of prunes.

Must Have Large Prunes.—It is evident that we must grow a larger prune than the Petite and one that will take with the consumer, and if we can find a better prune than the Italian well and good, but it is beyond doubt better for us than the Petite, and if we can't grow it successfully in the future, or a variety that is even better, we will simply have to retire from the race and give California the palm, for we simply can't grow 2 cent prunes where we have to dry by artificial heat generated in costly evaporation.

To keep in the swim, therefore, we have got to grow strictly first class 40-50s or even larger prunes. This can only be done by the most careful and painstaking work on the part of the grower. We cannot expect these sizes in the Italian even without much work. The trees must not be allowed to overbear and the land must be of the very best to attain this. The average Italian the past season was smaller than 50-60 size, and the average price did not exceed 3½c. While the main cause of this light weight can be attributed to the wet weather prevailing at the time of ripening, much is due to overbearing. This latter can only be overcome by systematic pruning and by hand thinning. We can not be satisfied with 30 per cent or even 50 per cent 40-50s; we must have our entire crop of that size.

Profits.—Now I am asked, is there any money at all in prune growing at the prices we had to take the past season? And we can scarcely hope that they will go above these figures in the future.

I will answer that if we take into consideration the cost of planting and properly caring for an orchard until it reaches the bearing age, say seven years, and the risks attending the harvesting of the crop, it hardly pays, as many of us who have paid dearly for our orchards can attest. But now that the orchards have been planted and many of them are in full bearing, it will pay to keep them up to the best possible state of productiveness, but I believe that there are now enough prune trees in bearing, or to be in bearing in the next two or three years, to supply the market at anything like reasonable prices for years to come.

California Dried Fruits in France.

There seems to exist in the consular district of Roubaix, and in northern France generally, a market for California dried fruits, which W. P. Atwell, United States commercial agent, thinks, with but little effort, could be made profitable. He refers to dried apricots, dried peaches, prunes, raisins, and candied fruits, and says:

A few small consignments of California prunes have been received in this consular district, and I am informed that the result obtained from their sale has been satisfactory. The price paid here for a good quality of prune, which, however, is generally admitted to be inferior to the California prune, is from 17 to 18 cents per pound. The through rates from San Jose to Havre are: Boxes, barrels or kegs, carload lots, \$1.25 per 100 pounds; packed in sacks, \$1.45 per 100 pounds. The duty on prunes imported direct from the United States is 10 francs per 100 kilograms (\$1.93 per 220.46 pounds). The carriage from Havre to Lille, Roubaix, Tourcoing, etc., is not quite 1 cent per pound.

The total quantity of prunes imported into France from the United States in 1896 was 147 tons, and this quantity would have been more than doubled if sufficient attention had been paid to the requirements. I have been informed by a large wholesale grocer that the city of Lille alone consumes from fifty to sixty tons of prunes per year.

Mr. Atwell suggests that exporters interested should send a suitable man to visit the dealers in the northern part of France, believing that such action would lead to a large increase in our export business in dried fruit. The idea of shipping California prunes to France is rather startling, but it seems likely to be realized largely.

Applications for Patents.

Some recent amendments of the United States patent laws which went into effect recently attract attention. Hitherto there has been but one barrier to the issue of a patent by our Government to a man who had proved that he was the original inventor. If the article in question had been in public use, or on sale for two years or more before the man sent his application to the Patent Office, he could not receive a patent. The public use and sale would naturally be considered as evidence of his having abandoned all claim to exclusive rights. The natural interpretation of the facts would be that the man did not consider himself the rightful owner, or else was willing to give the public the benefit of his ideas without charge.

The new law provides that if a notice of an invention appears in print, and specifies who is the author of it, the application for a patent must be made inside of two years; otherwise it is assumed that he abandons all claims. This appears just. It sometimes happens that several simultaneously invent the same thing. If the first man who thinks of it does not push the matter, either for lack of money or because he lacks the necessary spirit of enterprise, some of the other men should have a chance to go ahead and take out a patent. The wording of the revised statute is as follows:

"Any person who has invented or discovered any new and useful article, machine, manufacture, or composition of matter, or new and useful improvement thereof, not known or used by others in this country before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country for more than two years prior to his application, and not in public use or on sale in this country for more than two years prior to his application, may, upon the payment of the fees required by law, and other due proceeding had, obtain a patent therefor."

THE sale of the steamers *Pennsylvania*, *Ohio*, *Indiana*, *Illinois* and *Conemaugh* by the International Navigation Company to the States Steamship Company for the Pacific trade leaves five steamships flying the American flag crossing the Atlantic ocean. They are the *St. Paul*, gross tons, 11,629.21; *St. Louis*, gross tons, 11,629.21; *New York*, gross tons, 10,802.61; *Paris*, gross tons, 10,794.86; *Evelyn*, gross tons, 1963.44. The latter three were built in English shipyards and denationalized. The last annual report of Commissioner of Navigation Chamberlain states that 6399 steam vessels, of 2,358,577.59 tons gross register, were afloat flying the American flag, and that 3776 of them, with a gross registered tonnage of 1,206,247.41 were owned on the Atlantic and Pacific coasts, the balance being owned on the Northern lakes and Western rivers. Such figures are misleading. As a matter of fact there are only 186 seagoing steamships, over 1000 tons gross register, amounting to 478,300.38 tons, flying the American flag. The Hamburg-American line and North German Lloyds of Germany alone own 552,558.00 gross tons, or 74,258.00 tons more than all American companies put together. Following is a summary of the class of vessels mentioned flying the American flag:

| | No. | Gross tons. |
|---|-----|-------------|
| Steamers from Atlantic ports to foreign ports.... | 35 | 124,876.31 |
| Steamers from Pacific ports to foreign ports.... | 22 | 59,708.81 |
| Steamers from Atlantic ports coastwise..... | 95 | 235,239.42 |
| Steamers from Pacific ports coastwise..... | 28 | 58,475.84 |
| Grand total..... | 180 | 478,300.38 |

J. B. REINSTEIN, J. H. Budd and W. C. Jones, the trustees appointed by Mrs. Phoebe Hearst for the obtainment of an architectural plan of the buildings and grounds for the University of California, have completed their programme for an international competition, open to the architects of the world, a copy of which has been received. Copies of the programme for distribution will be forwarded to the capitals of all foreign countries and to the principal cities of the United States. The competition will close on July 1, '98, when all plans must be deposited with the United States Consul at Antwerp, Belgium. A total sum of at least \$20,000 will be devoted to premiums for the best plans. The sum of \$50,000 has been deposited in a San Francisco bank as a guarantee that the trustees will keep all their promised agreements. The programme gives full details of the competition, with rules, places of deposit, of plans, etc. The competition is open to the world and closes July 1st, '98. As heretofore noted at length, the regents have been enabled through the munificence of recent gifts to enter upon the work of erecting several groups of buildings that in construction, extent and appearance shall be commensurate with the fine site of the University.

A CONVENTION of Southern cotton growers was held at Atlanta, Ga., Dec. 14, nearly 300 delegates being present. Among subjects discussed were repeal of present mortgage, lien and other laws tending to reduce Southern farmers to poverty, restriction of speculation in cotton, reduction of cotton acreage, the planting of more food crops, complete organization in every Southern State and county, self-sustaining farms and information bureaus.

THE HOME CIRCLE.

The Baby.

Grasping at sunbeams and shadows,
Hands outstretched for the moon;
Heeding not the snows of December,
Heeding not the roses of June.
Clutching all things elusive,
Sobbing when shadows they prove;
Hushed in the arms of its mother,
Soothed by caresses of love.

Laughing and cooing and crying,
Sweet as the heart of a rose;
Trembling all over with mischief,
From its head to its chubby wee toes;
Filling our hearts with new sunshine,
Cheering our wearisome way;
Teaching us that the dark shadows,
Conceal the sun's beautiful ray.

Blessing of heaven, the dearest,
Our hearts by thy smile made glad;
The tone of thy soft, dimpled fingers
Has made us forget to be sad.
In thy smile we are basking in sunshine,
Thy prattle all gloom has beguiled;
There's nothing that's nearer to heaven
Than the innocent heart of a child.

—Mrs. A. H. Jarvis.

A Little Girl's Letter.

Dear grandma, I will try to write
A very little letter.
If I do not spell the words all right,
Why, next time I'll do better.

My little rabbit is alive
And likes his milk and clover.
He likes to see me very much,
But is afraid of Rover.

I've got a dove as white as snow,
I call her Polly Feather.
She flies and hops about the yard
In every kind of weather.

I think she likes to see it rain,
For then she smooths her jacket
And seems to be so proud and vain
The turkeys make a racket.

The hens are picking off the grass
And singing very loudly,
While our old peacock struts about
And shows his colors proudly.

I think I'll close my letter now,
I've nothing more to tell.
Please answer soon and come to see
Your loving little Nell.

—New Orleans Picayune.

Brockway's Hulk.

It lies in the marsh at the foot of that high ridge overlooking the broad Hudson with the rough edges of the Palisades cut against the sky. Below winds the busy Harlem, crowded with boats, bound with bridges and spanned by the great aqueduct stepping across on its sturdy legs. A rough path leads from the ridge to the river and to a secluded cove circling out to a low jutting point edged with white sand and yellow marsh grass. Here, high up in the mud, rests Brockway's Hulk.

Approached from the cove, it seemed only an abandoned barge or wharf boat, the relic and record of some by-gone tide of phenomenal height. Nearer it proved to be an old-fashioned canal boat sunk to the water line in the tall grass, its deck covered by a low hipped roof. Midway its length was cut a door opening out upon a short staging or portico supporting one end of a narrow, rambling bridge leading to the shore; this was built of driftwood propped up on shad poles. Over the door itself flapped a rag of an awning made from the end of a tattered sail. Some pots of belated flowers bloomed on the sills of the ill-shaped windows, and a wind-beaten vine crowded into the door, as if to escape the coming winter. Nothing could be more dilapidated or more picturesque!

I crossed the beach strewn with oyster shells, ascended the bridge and knocked. I had been tramping all day, sketching between the showers, and was tired out and wet.

The door was opened by a gray-bearded man in a rough jacket.

"Can you help me across the river?"

"Yes. Come into the hulk."

I entered a small, low-ceiled room with doors opening out into two others.

"You are wet," said the old man.

"Come near the stove." Then fixing his eyes upon me he asked abruptly: "What are you? A peddler?"

"No, a painter."

He mused a little, rubbing his beard with his thumb and forefinger and

making a mental inventory of my exterior, from slouch hat to tramping shoes. "And poor?"

"Very. We all are."

"What are you?" I asked, smiling.

"Me! nothing," he replied curtly, taking down an oil-skin hat from a peg and shutting the door behind him. In a few minutes he returned, shaking the wet from his sou'wester.

"You must wait. Dan, the brakeman, has taken the boat over by the railroad. He will return in an hour. If you are hungry you can sup with us. Emily, set a plate for the painter."

I turned and saw a child about fifteen years old, with dark eyes and brown hair, which held a tinge of gold in the lamplight.

Despite the evident poverty there was a certain air of refinement about the interior and its inmates, apparent not only in the few remaining relics of what seemed to denote better days, but in the arrangement of the furniture, the setting of the table and appointments of the tea tray. Their voices, too, were sweet and low, characteristic of people who live alone and in peace.

Brockway resumed his seat and continued talking, asking about the city as if it were a thousand miles away, instead of being almost at his door; of the artists, their mode of life, their successes, etc. As he talked, his eye brightened and his manner became more gentle. He seemed no longer the old boatman. I began to notice his straight nose, finely chiselled features and perfect teeth, so unusual in an old man, and was struck by the way his hair grew down on his temples—soft and silky—a sure sign of gentle blood. His hands, too, were well shaped, with tapering fingers, one of which bore, a gold ring curiously wrought and worn to a thread.

The talk drifted into fishing; the scarcity of bass and oysters now that the steamboats and factories fouled the river; and the encroachment of the real estate pirate staking out lots behind the hulk and destroying his privacy.

"Do you own the marsh?" I ventured to ask.

He started as if stung, looked at me searchingly, almost fiercely, and said, weighing each word:

"Not one foot of it, youngman. Own nothing but what you see; but this is mine—do you hear me—mine from the mud below to the ridge-pole over your head, with every rotten timber in it."

The child, who had been listening anxiously, rose quickly from her seat, laid her hand on her grandfather's shoulder, and, saying that tea was ready, gently led the way to the table.

Brockway arose courteously, as if her touch had softened him, took her arm, seated her and then me, and in a moment more had regained his gentle manner.

The meal finished, the old man lighted his pipe and seated himself in a large chair. I opened my portfolio and began retouching the sketches of the morning. The weather grew more boisterous, the wind howling and the rain beating against the small windows, and dropping, like the slow ticking of a clock, upon the floor. As the evening wore on, I began to speculate as to my future, so dependent on the return of the boat. The old man also grew uneasy, and peered through the window, listening. Finally he laid down his pipe, and said:

"The boat cannot get back to-night. You seem to be a decent man. I knew some of your kind once—and I liked them; for you artists get closer to the heart of things than most men. You can stay here and have Emily's room."

The child's room was once the old cabin of the canal boat. The little windows were still there, and the three steps leading down from the deck; so were the bunks, or rather the lower one; the upper one had been altered into a sort of closet. On one side was a row of shelves serving as a bureau, on which were such small knick-knacks as a child always loves—a Christmas card or two, some books, a pincushion backed with shells, a doll's bonnet, beside some trinkets and strings of beads. Next to this ran a row of hooks covered

by a curtain of cheap calico, half concealing her few simple dresses, with the muddy little shoes and her frayed straw hat in the farthest corner. Above the headboard of her bunk hung the likeness of a woman with large eyes, her hair pushed back from a wide, high forehead.

Everything about the simple room was as clean and fresh as care could make it, and I dropped to sleep with the tide swashing against the floor beneath.

As the autumn lost itself in the winter, I made weekly excursions to the hulk, sketching in the neighborhood, gathering nuts with little Emily for resting spells, or helping the old man with nets. On one of these days a woman plainly but neatly dressed met me at the edge of woods, inquired if I had seen a child pass my way, and disappeared in the bushes. I noticed her eager face and the look in her eyes when I answered and then the incident passed out of my mind. A few days later I saw her again, sitting on a pile of stones. Little Emily had seen her too, and stopped to talk to her. I could follow their movements over my easel, Emily holding her hand. When the child caught my eye, she started up and ran toward the hulk, the woman darting into the bushes. When I questioned her about it, she hesitated and said: "It was a poor woman who had lost her little girl and was very sad."

Brockway himself became more and more a mystery. I sought every opportunity to coax from him something of his early life, but he never referred to it but once, and then in a way that left it more impenetrable than ever. I was speaking of a recent trip abroad when he turned abruptly and said: "Is the Milo still by herself in that little room in the Louvre?"

"Yes," I answered, surprised. "Why do you ask?"

"Because, against that red curtain she is the most beautiful thing I know."

"When did you see the Venus?" I asked, quietly as my astonishment would allow.

"Oh, some years ago when I was in Paris."

I asked him, carelessly what year that was, and what he was doing in Paris; but he affected not to hear me, and went on with his hammering, remarking that the oysters were running so small that some slipped through his tongs, and he was getting too old to rake for them twice.

December of that year was unusually severe. The snow flew early, and the river was closed before Christmas. This shut off all communication with the Brockways except by the roundabout way over the hills from the West. Late in the following February I heard, through Dan, that the old man was greatly broken, and had not been out of the hulk for weeks. I started the same afternoon.

The ice was adrift and running with the tide, and the passage made doubly difficult by the floating cakes shelved one on the other. When I reached the hulk the only sign of life was the thin curl of blue smoke from the rusty pipe. Even the snow of the night before lay unbroken on the bridge. I knocked, and Emily opened the door.

"Oh, it is the painter, Grandpa! We thought it might be the doctor."

He was sitting in the armchair by the fire, wrapped in a blanket.

Holding out his hand, he motioned me to a chair, and said, feebly: "How did you hear?"

"Dan, the brakeman, told me."

"Yes, he knows. He comes over Sundays."

He was greatly changed, hollow-eyed and white, his grizzled beard, once so great a contrast to his ruddy skin, adding to the pallor of his face.

I sat down and told him of the river outside and the shelving ice, of my life in the city, the current gossip of the studios, and whatever I thought would interest him. He made no reply, but sat with his head buried in his hands. Soon the afternoon light faded, and I rose to go. Then he roused himself, threw the blanket from his shoulders and said, in something of his old voice:

"Don't leave me. I sheltered you once here in a storm, help me through this."

Later when the night closed in, he called Emily, kissed her forehead, and said: "Now go to bed Frowsy head. The painter will stay with me."

I filled his pipe, piled some driftwood on the fire and drew my chair near his. For some moments he kept his eyes on the crackling wood, then reaching his hand out he laid it on my arm and said, slowly:

"If it was not for the child, I would be glad that the end was near."

"Has she no one to care for her?" I asked.

"Only her mother. When I am gone she will come."

"Her mother? Why not send for her now?" I said, looking into his shrunken face. "You need a woman's care at once." His grasp tightened on my arm as he half rose from the chair, his eyes blazing as I had seen them that morning when he had cursed the boat's crew.

"But not hers—not hers! never while I live," and fell back in his chair exhausted.

In a few moments he continued, his voice still quivering.

"Men can sometimes cut you to the quick and a woman can leave a scar that never heals; but your child—the one you laid store by and loved and dreamed dreams of—she can tear your heart out. That's what Emily's mother did for me."

"And what became of her?" I said.

"She nursed him until he died—curse him—until he died—do you hear?"

"Where is she now?"

"Somewhere in the city. She comes here every now and then. Emily meets her and they go off together, and when I have been out raking my beds she has been in here with the child. Not long ago I met her outside on the footbridge—she did not look up—her hair is gray now and her face is thin and old—and so sad—not as it once was. God forgive me! not as it once was!"

He struggled to his feet, his eyes full of tears, took the lamp and brought me the picture I had seen in Emily's room the night of the storm.

"You can see what she looked like. It was taken a year before his death and came with Emily's clothes. I found it in the child's box."

I held it to the light. The large eyes looked at me even more pleadingly, and the smooth hair pushed back from the high forehead marked all the more clearly the lines of anxious care which were creeping over the young face. It seemed to speak to me in an earnest, pleading way as if for help.

After a while he raised his head, picked up the portrait from the table and looked at it long and earnestly, holding it in both hands muttering to himself. Then he crossed the room and threw himself on his bed. I stirred the fire, wrapped my coat about me and fell asleep on the lounge. Later I awoke and crept into his room. He was asleep, lying on his back, the picture still in his hands.

The following week I again visited the hulk with some delicacies for the old man. At the station I met Dan. He had on his black clothes. Brockway had died two days before and was to be buried that afternoon. Dan was going to the funeral.—F. Hopkinson Smith.

All the land above sea level would not fill up more than one-third of the Atlantic Ocean.



Gems of Thought.

Choose such pleasures as recreate much and cost little.—Fuller.

Good will, like a good name, is got by many actions, and lost by one.—Jeffrey.

Gratitude is a fruit of great cultivation; you do not find it among gross people.—Samuel Johnson.

It is of eloquence as of a flame; it requires matter to feed it, motion to excite it, and brightens as it burns.—Tacitus.

Good qualities are the substantial riches of the mind; but it is good breeding that sets them off to advantage.—Locke.

Let yourselves never think that you grew liberal in faith by believing less; always be sure that the true liberality of faith can only come by believing more.—Phillips Brooks.

How near must a person live to me to be my neighbor? Every person is near to you whom you can bless. He is nearest whom you can bless most.—William Ellery Channing.

We do not reject money because a few counterfeits are in circulation. Why should any one reject salvation because there are a few false-hearted professors in the church?

Choice and service—these were demanded of the Israelites, these are demanded of you, these only. Choice and service—in these are the whole life.—Mark Hopkins, D. D.

All the possible charities of life ought to be cultivated, and when we can neither be brethren nor friends let us be kind neighbors and pleasant acquaintances.—Edmund Burke.

"Love never dieth." We learn this as a promise. We get, after such suffering as involves as it were a new birth and other faculties, to know it as experience.—George S. Merriam.

Where God becomes a donor, man becomes a debtor. The debt of sin is mercifully discharged for him, that the debt of service might be willingly discharged by him.—Thomas Secker.

Gratitude consists adequately in these two things: First, that it is a debt; and, second, that it is such a debt as is left to every man's ingenuity, whether he will pay or no.—South.

Not to know what happened before we were born is always to remain a child; to know, and blindly to adopt that knowledge as an implicit rule of life, is never to be a man.—Chatfield.

It is always safe to take it for granted that, as yourself, so others are trying to do their best. Shortcoming is no sign of shortwilling. Sweetness is never whipped in.—J. F. W. Ware.

Men who look on nature and their fellow men, and cry that all is dark and gloomy, are in the right; but the sombre colors are reflections from their own jaundiced eyes and hearts. The real hues are delicate and need a clearer vision.—Charles Dickens.

Popular Science.

A Parisian ophthalmologist says that the incandescent electric light is the least harmful to the eyes of all artificial light. Next comes the light of a good kerosene lamp, after that candles, and the worst of all is ordinary gas light.

The oil glands of the skin are most numerous in the race living under the tropics, because the oil is nature's protection against the heat of the sun. In hot countries its action is often assisted by the application of vegetables or animal oils.

To the average eye not more than 5000 stars are visible; some persons having extraordinary strong eyes can see about 8000 stars; through the Lick telescope and other powerful instruments about 50,000,000 stars are visible.

A curious illustration of the power of light matter to perforate more substantial substances, when driven at a high velocity, occurred in the Royal Arsenal, England. A cast iron target plate, one inch thick, was placed 25 feet in front, at an angle of 45°, in order to break up everything into dust and

throw it upwards. A clay plug, weighing seven and one-half ounces, perforated an inch iron plate.

That birds build their nests by imitation has been called in question by Mr. A. G. Butler of London, who says that the reason why many of them at the beginning of the season trifle with building material for some time before they produce a satisfactory result is that they are unable at once exactly to remember what the character of the nest was in which they first saw the light of day.

Fashion Notes.

All kinds of airy gauzes, nets and mulls are worn, but this does not include lace, which is tabooed. Satin is not good form for correct mourning costumes.

Collars with stole ends are worn by the woman who loves frills. They can be fashioned by any deft fingers directed by taste.

An especially pretty affair of this description is of purple satin ribbon 5 inches wide. The collar is made like the ordinary stock, to twist around the throat twice. It has a little fan of plaited black lace at each side. The stole ends come from under the lower edge of the collar, and fall to the waist or below. The ribbon is trimmed by 2-inch frills of black lace, set apart their own width. The ends are finished with deeper frills. Another version of these *tours-de-cou* has the usual folded stock, but instead of a stole a shallow yoke and epaulet, formed of points of the silk.

One of the ornamental whims of soft plaid surah in tints of blue, green and gold had each point finished with a dangling ornament of cut jet. In combinations of colors the collarets are effective, and, when made artistically, wonderfully becoming. One showing three shades of violet and another of green ribbon, frilled with white chiffon, edged with black lace, are extremely dainty.

Butterfly collars are another airy and frivolous fancy which appeals irresistibly to the befrilled maiden. The collars are second cousins of the muslin cravat, but are prettier than those quaint and charming dress accessories. They are made of ribbon or muslin, with a big chiffon butterfly in front and frills of chiffon at each side.

One of the prevailing fashions in full dress is the wearing of exceedingly long, wrinkled sleeves, with low-cut or half-low bodices.

Tiny rings and bracelets and strings of gold beads are worn by many babies, and rings of polished silver are what the modern baby cuts her pearly teeth upon. Silver rattles are of all shapes and sizes. Some are like miniature tambourines, with many jingling bells; others have dolls' heads on top of an ivory stick, and others have grotesque faces or heads of dogs or cats wearing collars of bells.

Primrose and pale cameo pink crepe de chine is much used by high-class modistes in making dancing, debutantes' and bridesmaids' toilettes. This lovely fabric is trimmed with pearl and opal-beaded passementeries and beautiful laces in various fashionable designs. It is also made up with delicate contrasting fabrics in satin brocade, corded silk, plain satin or moire. Its most charming effect is, however, when combined with lustrous peau de soie, with draperies of silk net of the same tint, and bodice garnitures of sprays of roses and cascades of Venetian lace.

A sash of plaid ribbon, in which red and white predominate, is edged with a zig-zag insertion of black lace and ruffled with black chiffon.

Some of the new hyacinth, iris, sapphire, lobelia and similar new tints are quite as trying as violet and heliotrope, but when a becoming shade is once found, there are few colors that are more becoming to the wearer, or that can easily be made so by the introduction of a little cream color, a mixture of white or blue, or a touch of soft pink or ruby red near the face. This red must be no half-measure, but

brilliant, with not a trace of dull garnet in it.

Another, made of satin-striped moire ribbon, has a girdle of crushed ribbon caught in at the front by a hoop of cut steel. The ends of the sash are joined together by a strip of black insertion about one inch and a half wide. A ruffle of black chiffon about three inches deep forms a bias finish to the end of the sash and is duplicated midway between the waist and the end.

Huguenot caps are added to the top of many of the short, full, puffed sleeves of evening bodices.

Among the handsome fabrics that will be highly favored for tailor-made costumes next season are fancy Oxford suitings in tri-color melanges, boucle effects in French camel's hair, light as India cashmere and soft as down, numbers of very stylish novelty goods, genuine Scotch cheviots, English serge and diagonals, and creped cloth in colors medium and dark, and in light spring qualities.

Gray and green and black have been highly favored colors for seasons past, and now blue is making a bid for marked favor next season.

Blue in many tones and semi-tones will appear among every style of plain or fancy dress goods and jacketings. It is a beautiful dye in many of its deeper shades, but no color needs more careful selection.

The latest design for a finish to the waist of a gown is the closely folded velvet girdle that has a great corsage bow on the left side, drawn through a jewelled buckle. It rivals the jewelled belt and the sash in favor.

For wear at small social functions and for the theaters cloth gowns are in order, not, of course, in dark shades, but in some pale blue, gray or mastic cloth. The fancy is to make the bodice quite dressy with a guimpe and some sort of a bolero, trimmed with rows of velvet ribbon. Most dressy frocks are now made so that they can be worn with or without a guimpe, thus answering for both day and evening wear.

Curious Facts.

Twelve million silk hats are made annually in the United Kingdom, worth £5,000,000.

Russia possesses at least one luxury, in a breed of dogs which are said to be naturally quiet unable to bark.

Liszt's great skill with the piano was in part due to his immense industry. For years he practised ten hours a day.

The highest masts of sailing vessels are from 160 to 180 feet high, and spread from 60,000 to 100,000 square feet of canvas.

DOMESTIC ECONOMY.

Domestic Hints.

WELSH RAREBIT.—Put in a saucepan a tablespoonful of tomato ketchup, a tablespoonful of Worcestershire sauce, and one pound of soft chopped American cheese; and half a teaspoonful of salt, a dash of red pepper and a gill of water. Stand this over the fire, stir and beat rapidly until smooth. Pour at once over toasted bread and serve.

CHOCOLATE PUDDING.—One heaping teaspoonful of butter, one pint of milk, one pint of bread crumbs, five teaspoonfuls of grated chocolate or cocoa, yolks of three eggs, one cupful of sugar. Scald or boil the milk, add the bread crumbs and chocolate. Take from the fire and add the sugar and eggs which

have been beaten together, then the butter. Bake for fifteen minutes. When cold beat the whites of the three eggs with three tablespoonfuls of sugar, for the meringue, spread on top of the pudding and bake a light brown. Flavor both meringue and pudding with vanilla.

DATE GEMS.—Separate two eggs, beat the yolks and add half a pint of milk, half a cup of finely chopped dates, a cup and a half of whole wheat flour, a tablespoonful of melted butter and beat thoroughly; add one teaspoonful of baking powder and then stir in the well-beaten whites of the eggs. Bake in hot, greased gem pans in a quick oven for twenty minutes.

VANILLA SAUCE.—Beat one egg without separating until very light. Put one cupful of water and one-half of a cupful of sugar over the fire and bring slowly to a boil. When the sugar is completely dissolved turn in quickly one tablespoonful of cornstarch dissolved in a little cold water, and stir until thick and clear. Simmer for five minutes, pour it slowly into the beaten egg, stirring all the time. Add two teaspoonfuls of vanilla and send at once to the table.

LOBSTER LOAF.—Remove the meat from two good-sized boiled lobsters; chop rather fine with a silver knife; add while chopping a quarter of a pound of almonds cut into slices, a teaspoonful of onion juice, a clove of garlic, teaspoonful of chopped parsley, a tablespoonful of salt, and a dash of pepper and the whites of two eggs. Mix thoroughly and pack into small moulds. Stand in a baking pan of water, put them in the oven for twenty minutes, and serve cold on lettuce leaves, with mayonnaise dressing.

Hints to Housekeepers.

Salt thrown on coals when broiling steak will prevent blazing from the dripping fat. When contents of pot or pan boil over, or are spilled, throw on salt at once. It will prevent a disagreeable odor, and the stove or range may be more readily cleaned.

Do not fail to oil the wringer every time you wash. If oiled often there is less wear on the machinery, and less strength is expended by the operator. To clean the rollers, rub them first with a cloth saturated with kerosene oil, and follow with soap and water. Always loosen the rollers before putting the wringer away.

A dainty sandwich for supper is made by chopping finely a pint of raw oysters, season to taste with salt, white pepper and cayenne pepper, and put into a saucepan with two teaspoonfuls of butter and three tablespoonfuls of any dry biscuit crumbs. Heat until steaming, add a cupful of thick cream in which has been beaten the yolks of two raw eggs, and stir until the mixture thickens. Remove from the fire, add ten drops of lemon juice and more seasoning if liked. When cold spread between thin pieces of buttered bread.

Wash colored muslins in soapsuds. If black, add a little salt; if pink or green, add vinegar; for lilac, a few drops of ammonia, and saltpetre for blue. Rinse in cold water, and do not use the starch when it is in the least warm. Fine muslins are best ironed twice, in opposite directions; laces and embroideries by the the thread of the material. Hamburg edging looks nicer if ironed over flannel. Remove the irons from the stove as soon as the ironing is done; rub them well with a soft cloth, and keep them as dry as possible. To leave sadirons upon the stove affects them unfavorably.

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The Sun's Convulsions.

Cambridge professors ridicule the theory that a new world is being thrown off from the sun owing to the activity of sun spots. Prof. E. C. Pickering, director of the Harvard Observatory, says: "Such incredible reports discredit astronomy. The only things to be seen on the sun, to my knowledge, are sun spots. These do not produce any unusual excitement. Sun spots are not uncommon. This one is simply reported to be unusually large."

Prof. Young of Princeton University says of the theory that a new world is about to break away from the sun: "It's all bosh. The thing that has caused all this stir is the discovery of a new sun spot, which has suddenly burst into prominence. People can rest assured that a planet has not broken off from the sun and that there is no truth in the statement that it is traveling away from the sun and threatens to destroy the earth." The junior class, under the direction of Prof. Young, were interested observers of the new sun spot.

Prof. William R. Brooks of Smith Observatory, New York, reports the discovery of two groups of spots on the sun approaching the center of the disk. The publication of the statement has caused some sensational papers to characterize these spots as immense earth destroyers and are dancing in space with no known objective point, and one of them quoted from Revelations vii to sustain the fearful predictions it made.

"That is all nonsense," says Prof. John K. Ross of Columbia University. "Special students of the sun have long studied what are the effects of sun spots on the earth. No idea has yet been reached of what the proper effect is. These studies of the sun are shown by well authenticated records to have begun as early as 1610, while in China the records go back many, many years before that time. To-day all the leading observatories daily take photographs of the sun and keep an accurate record."

Creation of Fancy.—"The idea that sun spots break away from the sun's surface and are launched into space is simply a creation of the brain of the writer. The spots are believed by most astronomers to be cavities or depressions in the photosphere filled with gases and vapors which are cooler than the surrounding portions and therefore absorb a considerable portion of light. The fact that they are cavities is shown by the change in the appearance of a spot as it approaches the edge of the center of the disk the nucleus is nearly central. As it approaches the edge the penumbra becomes wider on the outer edge and narrower on the inner, and just before the spot disappears around the limb of the sun the penumbra on the inner edge disappears, the appearance being precisely such as would be shown by a saucer-shaped cavity in the surface of a globe."

"The diameter of the umbra of a sun spot ranges all the way from 500 to 1000 miles for a very small one to 50,000 or 60,000 miles in the case of large ones. The penumbra surrounding a group of spots is sometimes 150 miles across, though that would be rather an exceptional size. The present one is estimated at about 100,000. Not infrequently sun spots are large enough to be seen by the naked eye, and they have been often so seen at sunset or through fog."

"The depth by which the umbra is depressed below the general surface of

the photosphere is very difficult to determine, but it seldom exceeds 2500 miles, and is oftener between 500 and 1500 miles. The duration of a spot varies; sometimes it lasts a few days and sometimes a month or two. The spots never show themselves near the poles of the sun, but find their greatest development about 10° north or south of the sun's equator."

A Land Without Life.

The west coast of South America from north of Callao, Peru, to the port of Coquimbo, Chile, is a rainless region. From the Andes to the Pacific no rain falls, and no vegetation or animal life exists beyond what man brings there. It is a dead world. The last rain which fell in Antofagasta, Chile, was the first that had fallen in sixteen years, and the last shower in Iquique, Chili, was the first rain which had fallen in twenty-four years. The hills or mountains back of both these cities are bare rock and sand and red loose clay, yet the day after the rain a greenish tinge began to show itself and by the second day these bare and inhospitable hills were dressed in a green coat from top to bottom. As no more rain fell, this verdure quickly dried up and died. The query rises naturally, whence did this vegetation come? If from seeds lying dormant in the soil, then once sprouting would finish this source, and the short life of this plant gives no opportunity for the development of seed.

Every succeeding time when rain falls in these regions in periods of from fifteen to forty years the same phenomena occur. The growth evidently springs from some root which lies dormant in the soil, and is rather remarkable proof of the powers of nature to adapt life to hard conditions, as there is no evidence that for several million years past there have been any more favorable conditions for life on this coast than exist now. No evidence exists that at any time vegetable life has existed in all this region, and until the course of the winds changes all this region is destined to remain, as it is to-day, a barren desert.

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List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING DEC. 28, 1897.

- 596,419.—INSULATING MATERIAL—Borrowe & Lumley, S. F.
596,362.—RAISIN SEEDER—C. S. Cox, Fresno, Cal.
596,146.—ALARM CLOCK—W. Dupen, Whatecom, Wash.
596,105.—RAIL JOINT—F. Erdmann, S. F.
596,149.—ROCK DRILL—J. K. Firth, S. F.
596,401.—OVERHEAD SWITCH—D. Gaul, Los Angeles, Cal.
596,334.—SMOKELESS POWDER—F. A. Halsey, San Rafael, Cal.
596,156.—BADGE, ETC.—J. Hansen, Everett, Wash.
596,065.—EJECTOR FOR ASHES—F. H. Heath, Tacoma, Wash.
596,337.—FOLDING GATE—Henning & Schmid, S. F.
596,146.—COMBINED HARVESTER—B. Holt, Stockton, Cal.
596,210.—BICYCLE SUPPORT—F. Johnson, S. F.
596,329.—STREET SWEEPER—T. R. Jones, Sacramento, Cal.
596,413.—BEVEL GAGE—L. Manning, Clarksville, Cal.
596,414.—WHEEL RUNNER—J. McNaughton, Ruby Hill, Nev.
596,415.—AMALGAMATOR—W. Notley, Los Angeles, Cal.
596,178.—PROPELLER MECHANISM—E. E. Onley, Sacramento, Cal.
596,179.—STEERING APPARATUS—E. E. Onley, Sacramento, Cal.
596,124.—WAVE MOTOR—Pyle & McDonald, Simi, Cal.
596,218.—FREIGHT VESSEL—C. Salmond, S. F.
596,219.—STAMP WALLET—A. Schneider, San Diego, Cal.
596,221.—FLOWER HOLDER—Jennie L. Sturtevant, Gilroy, Cal.
596,343.—FRUIT PITTER, ETC.—T. M. Topp, Sacramento, Cal.
596,191.—REGULATOR—H. H. Tracy, S. F.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

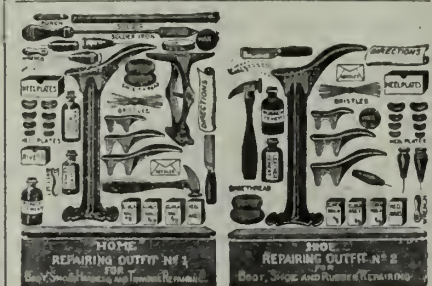
Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

FOLDING GATE.—James H. Henning and John E. Schmid, San Francisco, Cal. No. 596,327. Dated Dec. 28, 1897. This invention relates to an improvement in gates of that class which are composed of essentially vertical bars or members and which are designed to open and close horizontally. The object of the invention is to so construct the gate as to make the openings when it is extended as small as possible, and to provide for a great rigidity to resist torsional strain. It consists of vertical bars made T-shaped in transverse section, having slots made through the central leg, diagonally disposed bars crossing each other and pivoted in the slots, said bars having a reverse curve made upon each side of the pivot point, so that the upper and lower portions are thrown out of line with each other to fold against the opposite sides of the central leg of the main bars, and thus allow the whole gate to be closed up into very small compass. Between the main bars are intermediate ones with which the upper end of two of the adjacent diagonal bars are pivoted. Slides are fitted to clasp these bars, and with these slides the downwardly extending arms of the correspondingly adjacent pairs of diagonal bars are pivoted so that the upward movement of the bars and the downward movements of the slides allow the parts to be closed together, latches project from the central vertical bars and brace bars are so hinged as to press against opposite sides of the vertical bars and engage with the latches. The bottom lower ends of the gate sections are provided with rollers, and these travel in a channel iron guide which lies upon the floor for the purpose and may be folded up against the edge of the gate and locked thereto when the gate is folded.

FRUIT CUTTING AND PIPPING MACHINE.—Thos. M. Topp, Sacramento, Cal. No. 596,313. Dated Dec. 28, 1897. This invention relates to a device which is especially designed for removing pits from fruits, such as apricots and peaches. It consists essentially of a pair of circular disks, mounted to rotate with their peripheral edges meeting in a single plane, concavities or depressions formed in each of the cutters having holding points within the depressions and registering so as to seize and hold the fruit pit when the cut takes place. Hinged arms have cups mounted at the outer end adapted to grasp the fruit and hold it in line with the edges of the cutter, and shafts or pins carrying the cups are mounted upon arms, while the machine has fixed lugs upon it with which these arms contact, so that the cups are turned on their axes and the twisting movement given to the fruit after it has been cut, which acts to release it from the pit.

SMOKELESS POWDER.—Francis A. Halsey, San Rafael, Cal. No. 596,324. Dated Dec. 28, 1897. This invention relates to improvements in the manufacture of explosive compounds, and especially of that class known as smokeless gunpowder. It consists essentially in the combination of alkaline metal and earth metal salts and ammonium picrate in such a manner and such proportions as to produce the desired results.



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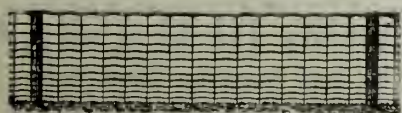
A trolley wire conveys energy, not power, from the power-house to the motor of an electric car. The energy thus conveyed performs no work except in overcoming the resistance of the wire, till it reaches the motor, wherein it is converted into power, which is expended in the performance of work. The boiler of a locomotive does not transmit power from the furnace to the water in the boiler; it transmits that form of energy known as heat. Strictly speaking, the boiler does no work. By a figure of speech we say a boiler "works well or ill," as the case may be; but when we consult our mechanical and thermo-dynamical definitions, we find no warrant for saying that a boiler works or that it transmits power. What it transmits is energy—a very different thing from either power or work. The steam pipe leading to the steam chest of an engine cylinder does not transmit power; it simply transmits the energy generated in the boiler. Only when the steam reaches the cylinder and the piston moves, energy is converted into work, which, when quantitatively expressed in units of work performed in a specified time, is power. On the other hand, rope, belt and shaft transmission, etc., are each examples of power transmission.—Engineer.

STEAM ENGINEER JOHN DUNN has a pretty piece of mechanism in the shape of a new and simple steering gear. The invention is extremely simple and is said to possess many advantages over other steam steering gears, for the reason that it is operated by a single rod, which is either advanced or drawn out, according to the wishes of the operator. The combination works similarly to the device in a pair of opera glasses that enables one to obtain a focus of the lenses. Regarding his connection with the filibuster steamer Three Friends, he humorously recites that it was in the hour of peril that the idea that has resulted in the completion of an almost perfect steam steering gear was conceived. "One day while out on a filibustering voyage to the island of Cuba a report arose on shipboard that a Spanish man-of-war lay to the eastward of our position and that her funnels had just begun to show signs of increasing steam. She headed for us. I stepped outside the engine-room to take a peep at her with my glasses," he says, "but I did not have the proper focus and began to turn the thumb screw affixed to the center bar of the glasses, when the idea struck me that, if the movement were reversed, with sufficient power back of it, the center piece could be made to revolve safely and very accurately. I investigated the matter and found that I was right."

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Wire Fencing.—Adapts itself to any ground. Catalogue free. DeKalb Fence Co., DeKalb, Ill.

Coast Industrial Notes.

—Beef cattle in Reno, Nev., sell for \$6.30 net per hundred lbs. on the cars.

—Cigars are now being made in southern California from home-grown tobacco.

—Output of beet sugar from southern California factories in 1897 amounted to 17,000 tons.

—Work has shut down on the construction of the Mexican Southeastern railway pending reorganization.

—Asphalt shipped from Santa Barbara county, Cal., in 1897 amounted to 583 cars, valued at \$150,000.

—There are 37,000 acres in southern California set out to oranges and 12,000 to lemons, the latter being mostly young groves.

—In '97 the orange and lemon crops netted Riverside county \$1,250,000. The southern California orange crop of 1897-98 is estimated at 12,000 carloads, or 4,032,000 boxes.

—The earnings of the Mexican National railroad for the second week of December were \$117,581.30 as against \$93,553.82 for the same week last year, an increase of \$24,027.48.

—A party of fourteen prospecting engineers representing capitalists interested in the construction of the Nicaragua Canal are en route to Nicaragua, where they will investigate as to the feasibility of undertaking the completion of the canal and submit a report.

—The Stockton and Tuolumne County Railroad Co. organized in San Francisco last week to build and operate a railroad from Stockton through San Joaquin, Stanislaus, Calaveras and Tuolumne counties, to Summerville, Cal.; capital stock, \$1,000,000; subscribed, \$60,000.

—It is announced on presumably good authority that Symon & Camacho sold their railway, from Altata to Culiacan, State of Sinaloa, Mexico, and that the purchaser is C. P. Huntington. It is also stated that Mr. Huntington will at once extend the International from Durango to Culiacan.

—California's '97 fruit and vegetable pack was 2,426,000 cases, worth about \$5,000,000, as follows: Tin, 58,224,000 cans, \$1,145,000; Sugar, 700,000 pounds, \$357,000; Fruit, 86,000,000 pounds, \$2,087,000; Asparagus, 4,900,000 pounds, \$100,000; Peas, 2,100,000 pounds, \$24,000; Tomatoes, 21,600,000 pounds, \$100,000; Boxes and labels, \$291,000; Labor, \$727,000; Fuel, etc., \$160,000.

—The Commissioner of the General Land Office commissioned United States Forestry Agent Allen to examine the country in the vicinity of Lake Tahoe with a view to setting it aside as a forestry reserve. Agent Allen handled his report at Washington and recommends that a reservation be set apart in the vicinity of the lake. He thinks the reservation should include lands on the upper Truckee river and the head waters of the Cosumnes and American rivers. If this recommendation is carried into effect it will probably interfere with the lumbering operations now being carried on in the vicinity of Lake Tahoe. The lake is the largest body of water high up in the Sierra Nevada and the scenery in the vicinity the grandest. It is the source of the Truckee river, which has the distinction of rising in a lake which has no other outlet, and sinking in Pyramid lake, which has no outlet whatever, the immense volume of water which empties into it in the spring and early summer evaporating early in the season.

—In 1895 what is known as the Lyons Commission went to China for the purpose of remaining there two years to study the commercial and industrial condition of that country, with a view to increasing the business between China and France. The commission consisted of thirteen members, each representing a prominent French chamber of commerce. It is known as the Lyons Commission because it originated in Lyons, France. It remained in China two years, the last member returning from there last October. The commission has not yet made known the full results of its investigations, and probably does not intend to do so. It says the people are adroit, industrious and love money, but do not know how to make it. The mandarins, the lettered classes generally, are, above all others, discontented, and are openly or sullenly hostile. They are the principal beneficiaries of the present regime. France counts largely upon her Indo-Chinese empire as a nucleus around which to build up her trade in China, and calculates to receive the co-operation of Russia in many ways. It is contemplated to open the way for a more extended commerce by beginning with bazaars, to be conducted by Frenchmen with Chinese in subordinate positions wherever it will be found possible to employ them. It is announced that Franco-Russian bazaars will be opened in St. Petersburg and Moscow during the coming winter. China, says one of the commissioners, is rich, but the people are lacking in economic machinery in keeping with that of wealth. The absence of transportation is the great obstacle to business; but even a greater hindrance is the lack of credit. Everything in the nature of rapid circulation and business confidence must be created. Population and production are only developed on the surface. The higher ability to produce and the greater capacity to enjoy and consume are dormant. The reforms contemplated will increase tenfold the productive capacity, with a consequent increase of the purchasing power of the enormous population. Evidences of a disposition to adopt modern methods are now conspicuous in the building of railroads and the introduction of machinery. The constantly growing foreign debt will soon force China to reform its financial policy, which can only be done by outside help. The nation that establishes trade throughout China, builds railroads, and introduces improved methods of water transportation will probably reform the finances and monopolize much of the trade.

An Elgin watch always has the word "Elgin" on the works. Elgin National Watch Co., Elgin, Ill.

Nervous Break Down.

IT COMES TO THE PREACHER FROM OVER STUDY AND BRAIN TIRE.

It Comes to Any Person, Too, Who Worries and Frets.

From the Huron Tribune, Bad Axe, Mich.

A "breaking down of the nervous system" is a modern expression,—a modern complaint. It is induced by prolonged strain and the overtaking of the nervous system, and is a product of over hurry and hustle. It affects the preacher and the lawyer—the direct results of brain tire. It affects people in any walk of life, too, who worry and fret. It means a depleting of the nerve forces.

It is curable by complete rest and change of scene, also by the use of nerve restoratives and nerve foods. As the first method is not within the reach of all, the latter offers the most universal and practical method of treating the complaint. When it is determined that medicine is to be used, select that one which contains the most nerve-nourishing properties. Do not take nerve tonics. They only stimulate, and the reaction leaves you worse than you were before. Select the medicine that is to the nerves what meat is to the body—one that as it builds up the nerves, also increases your weight. The best thing for the purpose is Dr. Williams' Pink Pills for Pale People, the reputation of which is built up by solid and indisputable proof, and which is known in every hamlet in the country.

As a proof of its merits in such cases, read the following letter of a clergyman:

DR. WILLIAMS' MED. CO.,

Schenectady, N. Y.

Dear Sirs:—In April, 1896, I was a hopeless case, owing to a complete breaking down of my nervous system and to a persistent stomach trouble. I had been treated by a great many physicians but received no permanent benefit. I had been down four times with nervous prostration and twice with gastritis. These attacks would come with such violence as to throw me into spasms. The time came when physicians said I must stop preaching or die. I would be so exhausted after the last service on Sunday that I could scarcely get from the pulpit. Many a time I have had to sit down and rest before I could leave the church in order to gain a little strength. I could eat neither meat nor vegetables. I dared not allow my bare feet to as much as touch the cold carpet or floor, to say nothing of taking a cold foot bath. If I did I was immediately seized with cramps. In this condition I commenced to take Dr. Williams' Pink Pills for Pale People. I took one box and felt no better—in fact worse. I said I would take no more, but my wife urged the matter, feeling my life depended upon the result, as every thing else had failed, and I was "used up." I therefore continued to take them. Since then, and it has been several months, I have had but one slight attack and have enjoyed life. Have preached all summer and held revival meetings for fifteen weeks. During that time my wife was sick seven weeks, so that my rest was much broken. Some nights I did not sleep at all. I have had no muscular exercise for years until recently, when I have done some work in my garden, and my muscles stand the test remarkably well. I can eat any thing I desire, and can now enjoy a cold bath daily. Every Sabbath I preach three times, and now think I am good for another twenty years if the Lord wills. I am surprised at myself and sometimes think it cannot be possible that I have accomplished what I have.

(Signed) "REV. J. N. MCCREADY,

Elkton, Mich."

Find attached, the affidavit of Mr. McCready, made before a notary public.

STATE OF MICHIGAN, ss.

COUNTY OF TUSCULOA, ss.

J. N. McCready, being duly sworn, says that the above and foregoing statements made by him are true. Subscribed and sworn to before me this 23rd day of July, 1897.

J. D. BROOKES, Notary Public.

All the elements necessary to give new life and richness to the blood and restore shattered nerves are contained, in a condensed form, in Dr. Williams' Pink Pills for Pale People. They are also a specific for troubles peculiar to females, such as suppressions and all forms of weakness. In men they effect a radical cure in all cases arising from mental worry, overwork or excesses of whatever nature. Dr. Williams' Pink Pills are sold in boxes (never in loose bulk) at 50 cents a box or six boxes for \$2.50, and may be had of all druggists, or direct by mail from Dr. Williams' Medicine Co., Schenectady, N. Y.

A GLIDING BOAT is a mechanical novelty which has lately been tried in England with success. Two parallel hulls are connected by cross beams, forming a platform on which are placed the engine and boiler. The propeller shaft runs down obliquely into the water. Beneath the hulls are secured flat blades, extending from one keel to the other, and projecting some distance on each side. The flat surfaces of the blades incline slightly upward in front. When the engine is started, the boat gradually rises to the surface; and when a speed of twenty miles an hour is reached, as was realized, only the back part of the blades touches the water.

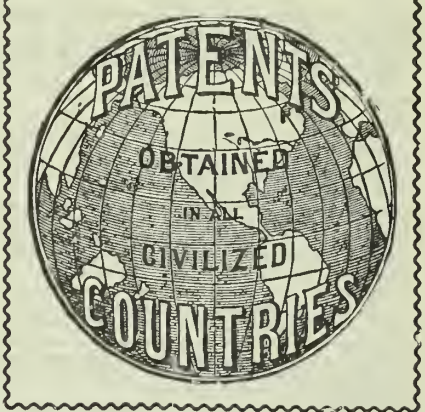


HAZARD POWDER.

It is Quick,
Clean, Strong
And Reliable.

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421 MARKET ST., San Francisco, Cal.

PATENTS



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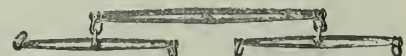
PATENT AGENCY.

Our U. S. and Foreign Patent Agency presents many and important advantages as a Home Agency over all others, by reason of long establishment, great experience, thorough system, intimate acquaintance with the subjects of inventions in our own community, and our most extensive law and reference library, containing official American reports, with full copies of U. S. Patents since 1872. All worthy inventions patented through DEWEY, STRONG & Co.'s Patent Agency will have the benefit of a description in the *Mining and Scientific Press*. We transact every branch of patent business, and obtain patents in all countries which grant protection to inventors. The large majority of U. S. and foreign patents issued to inventors on the Pacific Coast have been obtained through our agency. We can give the best and most reliable advice as to the patentability of new inventions. Our prices are as low as any first-class agencies in the Eastern States, while our advantages for Pacific Coast inventors are far superior. Advice and circulars free.

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PATENT AGENTS,

330 Market Street, San Francisco, Cal.



DANDY STEEL PLOW DOUBLETREES.

PRICE PER SET, \$1.

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MONEY IN HONEY!

The Weekly

American Bee Journal

Tells all about it.

Sample Copy Mailed Free

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118 Michigan St., CHICAGO, ILL.



NOT TO IMPROVE IS GOING BACKWARD
The cows are the best source of revenue on the farm. Don't refuse to learn how to do better with them.

Hoard's Dairyman
is the unbiased champion of the dairy cow (regardless of breed) and is the best adviser for those interested in the production of milk and butter. Now is the time to decide. If you send at once mentioning this ad, you get the paper 15 months for \$1.00—20 pages every week. Don't put it off—write to-day. Sample free. W. D. Hoard, Editor. **Hoard's Dairyman, Ft. Atkinson, Wis.**

Breeders' Directory.

Six lines or less in this directory at 50c per line per month.

Horses and Cattle.

F. H. BURKE, 626 Market St., S. F. Holsteins, winners for three years of State Fair butter contests; Jerseys and Durhams competing. New Catalogues. Registered Berkshires.

JERSEYS, HOLSTEINS & DURHAMS. Best Butter and Milk Stock. Thoroughbred Hogs and Poultry. **William Niles & Co.**, Los Angeles, Cal. Breeders and Exporters. Established 1876.

JERSEYS—The best A. J. C. C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. **Oakwood Park Stock Farm, Danville, Cal.**

PETER SAKS & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

Poultry.

MRS. J. G. FREDERICKS, Madison, Cal. Fresh Eggs in small or large lots at reasonable prices from choice Brown and Buff Leghorns, Black and White Minorcas.

PARK VIEW POULTRY YARDS.—We have purchased the F. P. Lowell stock of Thoroughbred Poultry, including prize-winning White and Black Langshans. **F. E. Townsend & Co.**, 1025 J Street, Sacramento, dealers in Monitor Incubators and Poultry Supplies. Catalogue Free.

SANTA TERESA POULTRY FARM, Eden Vale, Cal. Barred Plymouth Rocks, Black Minorcas, White Leghorns, Brown Leghorns. Fine Stock and Eggs for sale. Send for circular.

WILLIAM NILES & CO., Los Angeles, Cal. Nearly all varieties of Poultry, Dairy Cattle and Hogs.

SEND FOR CATALOGUE OF CALIFORNIA'S greatest poultry farm. **J. W. Porgeus & Co.**, Santa Cruz, Cal. Belgian Hares.

CALIFORNIA POULTRY FARM, Stockton, Cal. Send for illustrated and descriptive catalogue, free.

EXCELSIOR POULTRY YARD, Kingsburg, Cal. Send for circulars describing stock.

W. H. YOUNG, Stockton, Cal. All varieties of Fowls, and Belgian Hares. Prices on application.

WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

MANHATTAN EGG FOOD, Red Ball Brand, at all grocers; or wholesale, **Tillman & Bendel**, S. F.

Swine.

ELIAS GALLUP, Breeder of Poland China Hogs, Hanford, Kings Co., Cal.

BERKSHIRE AND POLAND-CHINA HOGS, Best Stock, Thoroughbreds. **Wm. Niles & Co.**, Los Angeles, Cal. Established 1876.

J. P. ASHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Swine.

CHAS. A. STOWE, Breeder Improved Berkshires and Poland-China Hogs. Box 283, Stockton.

Sheep and Goats.

J. B. HOYT, Bird's Landing, Cal. Importer and Breeder of Shropshire Sheep; also breeds Crossbred Merino and Shropshire Sheep. Rams for sale. Prices to suit the times. Correspondence solicited.

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MISS DELLA BEACH, San Jose, Cal. Breeder of Reg'd Thoroughbred Scotch Collie Shepherd Dogs.

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Open All Year. : A. VAN DER NAILLEN, Pres't. Assaying of Ores, \$25; Bullion and Chlorination Assay, \$25; Blowpipe Assay, \$10. Full course of assaying, \$50. Established 1864. Send for Circular.

Blake, Moffitt & Towne, DEALERS IN PAPER,

512 to 516 Sacramento St., San Francisco, Cal. **BLAKE, McFALL & CO.**, Portland, Or.

SPOKANE and Tacoma, Wash., Portland, Or., San Francisco, Los Angeles and San Diego, Cal., are to be connected by the longest telephone system in the world. The circuit will be 1800 miles in length between Spokane and the Mexican boundary. The Sunset Telephone Company's northwest division is preparing to build across the Cascade mountains in '98, connecting by a direct line Tacoma and Spokane, which now talk to each other via Portland and The Dalles. At present the Sunset telephone line runs southward to Eugene, Or., then to Redding, Cal., a distance of 300 miles, through the Siskiyou mountains. This gap is to be closed next year. A series of circuits which can be connected in a continuous line is now in operation between Boston and Omaha. This line is about 1700 miles long, 129 miles shorter than the Spokane-San Diego line. An extension to Helena, Mont., is not improbable from Spokane. This would make the line 2211 miles in length, and make a long-distance record not likely to be equaled until the company gets its proposed line to the Klondike in operation.

A newer process is liquid brazing. Several years ago it was demonstrated by a company formed for that purpose that a specially treated joint, plunged into molten spelter, would not only braze in a very few seconds, but would come out almost entirely free from scale, a brisk cleaning by a metal brush being about all the after treatment required. The process was a secret one; the most important point being the anti-flux, which was a preparation painted over the parts to which it was desired the spelter should not adhere. Briefly, liquid brazing consists in reducing the spelter to a molten form in a suitably shaped crucible at a high temperature and then immersing the joint to be brazed in the liquid mass. The surfaces to be brazed are painted with a flux and the adjacent parts with an anti-flux.

WINANS' cigar steamers, famous a generation ago, which have lain idle in Southampton water for the last twenty-five years, are now to be broken up and sold for old iron. They represent quite a large and entirely inert investment, and no further experiments in marine construction on the principles which they embody is to be looked for. They will always rank among the curiosities of shipbuilding, and stand as a sign that the experimental millionaire and his money are sometimes speedily parted; but they possessed no fitness for the function designed, and had not enough "go" in them even to find their way to Davy Jones' locker, so they will go to the scrap heap instead.

The value of the exports of electrical apparatus from this country has amounted in a little more than half a year to over \$2,000,000, which represents a gain of about \$500,000 over the corresponding period last year. Noteworthy as this improvement has been, it is likely to be small in comparison with the increase which will be seen before another year has elapsed, as the demand for American electrical supplies is apparently growing stronger than ever. And since most of the exports are patented articles, it is fairly sure that the business, whatever measure of growth it may attain, will be a permanent one.

GLYCERINE is a good thing for tempering steel. The glycerine must have a density of from 1.03 to 1.26 at 150° C., and its weight should be about six times as great as that of the steel to be tempered. For hard tempering, add to the glycerine from one-fourth to four per cent of sulphate of potash or of manganese; and for mild tempering, add one to ten per cent of chloride of manganese or one to four per cent of chloride of potassium.

By a simple rule the length of the day and night, any time of the year, may be ascertained by simply doubling the time of the sun's rising, which will give the length of the night, and double the time of the setting will give the length of the day.



THE GREAT REMEDY

FOR PAIN

CURES PROMPTLY.



"ALAMO" HEREFORD CATTLE FARM, 1½ Miles South of Reno, Nevada.



300 HEAD OF Registered HEREFORDS

Bred from the most noted herds in England and the United States.

Awarded at California State Fair 42 individual, special and sweepstakes in 1896, aggregating in cash premiums \$801.50.

At State Fair held at Sacramento in 1897 received Gold Medal Sweepstakes for herds and every premium given to Hereford cattle.

Stock in all Classes for Herds or Individual Cattle for Sale.

JOHN SPARKS, Proprietor, RENO, NEVADA.

Always in the Lead!

In the face of the strongest competition ever known at a California State Fair our ewing herd again carried off the majority of the premiums. Why? Because we have the best pigs in the State. Choice pigs from prize winners ready to ship at reasonable prices. Write for Catalogue and Prices.

SESSIONS & CO., Lynwood Creamery, Dairy and Stock Farm, JAS. R. BOAL, Mgr. P. O. Box 686, Los Angeles, Cal.

Cooper's Sheep Dipping Powder.

ONE CASE MAKES 1000 GALS. DIP. REDUCTION IN PRICE, \$14.50 PER CASE.

Used With Cold Water. Easily Handled. Certain Cure for Scab.

General Agents, **Shoobert, Beale & Co., Wool Commission Merchants,** December 1st, 1897. 216 SANSOME STREET, SAN FRANCISCO.

Quinn's Ointment



is a boon to suffering horse flesh and yielder of profit to man. It cures all diseases of the legs and feet, making lame horses sound, thus converting loss into profit.

All Druggists Sell It.....

If by chance you should not find it there we'll mail you package for \$1.50. Smaller size 50 cents.

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Improved Pacific Incubator.



Absolutely Self-Regulating, Hot Water.

Send stamp for our catalogue of Incubators, Wire Netting, Blooded Fowls and Poultry Appliances generally. Remember the Best is the Cheapest.

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THE SUCCESSFUL INCUBATOR

is the standard machine for hatching strong, healthy chicks. Self-regulating, patent turning trays, drying room for chicks, non-explosive lamp—just a few of its good points. Sold under positive guarantee to work perfectly. Beautifully made and durable. Our 128 page catalogue describes them fully; tells many things about poultry raising you should know. Mailed for 8 cts. **DES MOINES INC. CO.** Box 540 DES MOINES, IA.

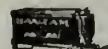
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In all the many shows in which it has participated, there must be something in the superiority claims of the **RELIABLE INCUBATOR**. Self-regulating, entirely automatic, you put in the eggs, the Reliable does the rest. All about this and many things of value to the poultry man in our new book. Send 10 cts. for it. **RELIABLE INCUBATOR & BROODER CO., QUINCY, ILL.**

TREE WASH, OLIVE DIP.

"Greenbank" Powdered Caustic Soda and Pure Potash.

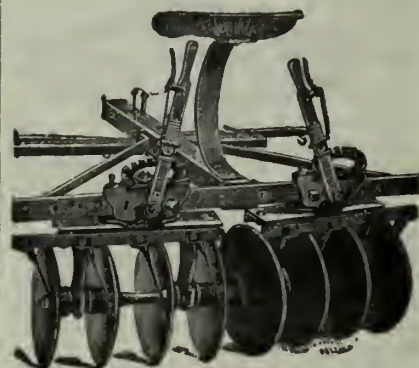
T. W. JACKSON & CO. Sole Agents. No. 226 Market Street. SAN FRANCISCO, CAL.



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PATENTS

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Pacific Reversible Disc Harrow.

4-foot, 5-foot and 6-foot sizes in 16 or 20-inch discs. We guarantee that this Harrow can be more quickly reversed than any machine in the market. Our prices are a revelation. An extension can be furnished admitting of a space of between 5 and 6 feet between gangs. A center-cut device can be furnished, if desired.

HOOKER & CO.,

16 and 18 Drumm St., San Francisco.

Pacific Oil and Lead Works,

SAN FRANCISCO.

OIL CAKE MEAL,

(OLD PROCESS)

The Best Food for Stock. We Also Make

Cocoanut Cake,

Recommended Especially for

POULTRY AND HOGS.

As Well as for Other Kinds of Stock, in Connection with Oil Cake.

(See Analysis in Cal. Dairy Ass'n Report for 1896.)

KITTLE & CO., Agents,

202 California St., San Francisco.

GOING TO ALASKA?

We Outfit Prospectors COMPLETELY.

We Do it BETTER and CHEAPER than anyone else.

HOME SUPPLY CO., 217-219-221 Drumm St., S. F.

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316 MONTGOMERY STREET,

Bet. California and Pine, SAN FRANCISCO, CAL.

S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, January 12, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|--------------|--------------|
| Wednesday..... | \$ 91½ @ 90½ | \$ 82½ @ 82½ |
| Thursday..... | 89½ @ 90½ | 81½ @ 81½ |
| Friday..... | 90½ @ 91½ | 81½ @ 82½ |
| Saturday..... | 91½ @ 91½ | 82½ @ 81½ |
| Monday..... | 91½ @ 90½ | 81½ @ 81½ |
| Tuesday..... | 90 @ 91 | 81 @ 81½ |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|-----------|-----------|
| Wednesday..... | 78½ @ 78½ | 68½ @ 68½ |
| Thursday..... | 78½ @ 78½ | 68½ @ 68½ |
| Friday..... | 78½ @ 78½ | 68½ @ 68½ |
| Saturday..... | 78½ @ 78½ | 68½ @ 68½ |
| Monday..... | 78½ @ 78½ | 68½ @ 68½ |
| Tuesday..... | 78½ @ 78½ | 68½ @ 68½ |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|-----------------|------------|
| Thursday..... | \$1 37½ @ 1 36½ | — @ — |
| Friday..... | 1 34½ @ 1 40 | — @ — |
| Saturday..... | 1 38½ @ 1 38½ | — @ — |
| Monday..... | 1 39½ @ 1 37½ | — @ — |
| Tuesday..... | 1 37½ @ 1 35½ | — @ — |
| Wednesday..... | 1 36½ @ 1 36½ | \$1 26 @ — |

Wheat.

The wheat market in this center is nominally about 25c per ton lower at time of going to press (Wednesday) than at close of previous review. There is so little doing that prices are not well defined. Values in all leading wheat centers have been on the decline most of the week. The depression has been most marked in Liverpool futures, these dropping 2¼ @ 2½d on May and July, the equivalent of about 4½c per cental. In Chicago the decline was only about 1c per bushel for May and 1½c per bushel for July. May wheat on the San Francisco Board declined during the week 3½c per cental. The Liverpool weakness was attributed to increased offerings and more indifference on the part of buyers. Here a rather firm freight market and some rainy weather aided in the depression of values. Shippers were not eager buyers. Market at close, however, was not quite so weak as on day preceding.

A noteworthy feature of the export movement from this port is the continued demand for wheat for South Africa. At this writing there are four ships under charter for above destination, one of the vessels having been added to the engaged list the current week. The movement in question is still more remarkable when it is considered that the tonnage now engaged to carry wheat to Africa represents nearly one-fifth of the entire fleet of chartered wheat ships at present in port. This is extraordinary, and prior to the past two seasons has been without anything approaching a parallel in the history of the wheat trade of this center. Another feature worthy of mention is the fact that the value of the wheat exports for the season to date, nearly \$11,000,000, is in excess of that for corresponding time of any previous season for the past six years. With the single exception of last year, the quantity of wheat shipped out is also larger than for corresponding time of any previous season since 1891-'92. About 7,100,000 centals of wheat, exclusive of flour, have been forwarded so far this season. A year ago the shipments aggregated about 8,000,000 centals, but for the previous four years at no time in the middle of January did the wheat exports for the season foot up a total of 6,500,000 centals. In one season, 1894-'95, the exports for the period named fell under the 5,000,000 cental mark. The export trade may not make as good a showing during the next four or five months as during the latter half of 1897, but prospects are that the season as a whole will present a very fair record so far as the outward movement of wheat is concerned.

California Milling.....\$1 42½ @ 1 47½
Cal. No. 1 shipping, alongside.....1 40 @ 1 42½
Oregon Valley.....1 40 @ 1 42½
Walla Walla Blue Stem.....1 40 @ 1 47½
Walla Walla Club.....1 35 @ 1 42½

CALL BOARD PRICES.

On San Francisco Call Board prices for No 1 white wheat per cental for the week were as follows for the options named:

May, 1898, delivery, \$1.40 @ 1.35½.

December, 1898, delivery, \$1.26 @ —.

Wednesday, at regular noon session of Call Board, May wheat sold at \$1.36½ @ 1.36½; December, 1898, \$1.26 @ —.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|----------------|----------------|
| Liv. quotations..... | 7s2½d @ 7s3½d | 8s1d @ 8s1½d |
| Freight rates..... | 17½ @ 19s | 31½ @ 32½s |
| Local market..... | \$1.52½ @ 1.60 | \$1.40 @ 1.42½ |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

Moderate quantities have gone abroad the past week by steamer and sailing vessel, principally to China and Central America, but there has been no extensive trading on local account. The market has shown a fairly steady tone, values not having been sufficiently disturbed to warrant any alterations in quotations.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | \$3 00 @ 3 25 |
| Superfine, good to choice..... | 3 35 @ 3 60 |
| Country grades, extras..... | 4 00 @ 4 25 |
| Choice and extra choice..... | 4 25 @ 4 50 |
| Fancy brands, jobbing..... | 4 50 @ 4 65 |
| Oregon, Bakers' extra..... | 3 90 @ 4 25 |
| Walla Walla, Bakers' extra..... | 3 90 @ 4 25 |

Barley.

In the open market the values for this cereal the current week have shown no radical changes, either for Brewing or Feed descriptions. The tone or general feeling wavered from strong to weak as the prospects were for either dry or wet weather. Values for spot Barley were most of the time, however, on a dry weather basis. The rainfall to date is less than half the quantity it aggregated at corresponding date in 1896-97, but there have been other seasons very similar to this one, as regards dryness, prior to January, in which plenty of rain was realized later on and good crops were realized. On the other hand, there have been some very wet winters followed by comparatively poor harvests. Call Board prices fluctuated considerably, being especially sensitive to weather influences. May feed advanced nearly 5c on Friday of last week, receded about 4c on Saturday, and then recovered 2½c on Monday. There was a decline Tuesday of fully 2½c in May feed and a recovery Wednesday of about 1c. Spot market closed strong, and was notably higher than a week ago.

| | |
|---------------------------------|-------------|
| Feed, No. 1 to choice..... | 92½ @ 95 |
| Feed, fair to good..... | 87½ @ 90 |
| Brewing, No. 1 to choice..... | 1 00 @ 1 10 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

May, 1898, delivery, 87½ @ 82½c.

December, 1898, delivery, — @ —c.

Wednesday at regular noon session of the Call Board May, 1898, feed sold at 83½c.

Oats.

Market is showing more firmness, the improvement being mainly in tone rather than in quotable values. Most holders are, however, asking an advance on prices lately current. There are not many oats arriving from any quarter, but supplies in warehouses are of fairly liberal proportions and are larger than a month ago. While there is considerable inquiry, buyers refuse to take bold freely at any very marked advance.

| | |
|-------------------------------|---------------|
| White Oats, fancy feed..... | 1 17½ @ 1 20 |
| White, good to choice..... | 1 10 @ 1 15 |
| White, poor to fair..... | 1 02½ @ 1 07½ |
| Gray, common to choice..... | 1 12½ @ 1 20 |
| Milling..... | 1 10 @ 1 15 |
| Surprise, good to choice..... | 1 15 @ 1 22½ |
| Black Russian..... | 97½ @ 1 40 |
| Red..... | 1 02½ @ 1 30 |

Corn.

No radical changes have been experienced in the market for this cereal since last review. Demand is not very extensive, either for export or on local account, but supplies are in comparatively few bands and it is exceptional where pronounced selling pressure is being exerted. Yellow Corn continued to command better prices than White.

| | |
|----------------------------------|--------------|
| Large White, good to choice..... | 92½ @ 95 |
| Large Yellow..... | 97½ @ 1 00 |
| Small Yellow..... | 1 00 @ 1 02½ |
| Eastern Yellow..... | — @ — |
| Egyptian White..... | — @ — |
| Popcorn, shelled, P. M..... | — @ — |

Rye.

Market is fully as firm as previously quoted. There is not much arriving, and there are no evidences of any large quantities remaining in the interior.

Good to choice, new.....1 00 @ 1 02½



Plow : Talk.

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ARE THE BEST GENERAL PURPOSE PLOWS IN THE WORLD.

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We mean the GENUINE OLIVER, and not the imitations claiming to be the Oliver, or equally as good. Such imitations are on the market, placed there by unscrupulous manufacturers who seek to trade on the good name of the OLIVER.

Look out for imitations, buy only the genuine Oliver plows and repairs, and be sure you are right before you take the plow home.

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13 and 15 Main St., San Francisco, Cal.

Buckwheat.

There is so little arriving that there is virtually no opportunity for wholesale transactions. Market is in favor of sellers. In a small way higher figures than are quoted are realized.

| | |
|---------------------|-------------|
| Good to choice..... | 1 50 @ 1 60 |
| Silverskin..... | 1 60 @ 1 65 |

Beans.

Asking rates for Pinks and Reds have been advanced, but Bayos are not quotably higher than for several weeks past. Values for the latter variety are already tolerably well elevated and are still considerably above those of any other bean on the list. Bayos are expected to be in high request shortly on Klondike account. If holders are compelled to look elsewhere for a market they are not likely to realize a profit on the supplies they now control. Most of the recent purchases by speculators have been within range of \$2.90 @ 3.00. Values for Limas and nearly all descriptions of White beans are being well sustained at the rates prevailing. According to the views of conservative observers, White beans are to-day a better speculative purchase at the going rates than are either Bayos or Pinks. There is more room for prices of White beans to advance before they get to levels likely to be regarded as too high when an active demand sets in.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 25 @ 1 35 |
| Small White, good to choice..... | 1 35 @ 1 40 |
| Lady Washington..... | 1 30 @ 1 40 |
| Butter, small..... | 1 25 @ 1 40 |
| Butter, large..... | 1 50 @ 1 60 |
| Pinks..... | 1 70 @ 1 80 |
| Bayos, good to choice..... | 2 90 @ 3 00 |
| Reds..... | 1 50 @ 1 60 |
| Red Kidneys..... | 2 00 @ 2 25 |
| Limas, good to choice..... | 1 60 @ 1 70 |
| Black-eye Beans..... | 2 25 @ 2 50 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

The bean market in the East is reported as follows by recent advices coming through by mail from New York, prices quoted being per 60-lb. bushel:

Much of the usual holiday quietness has prevailed this week, but fresh receipts have been on a reduced scale, and the absence of any decided pressure to sell has tended to keep a fairly steady feeling on most varieties. Marrow have had much less call for export, but the influence of the free movement last week has been shown in slightly increased firmness on really choice quality; hence while some business has been done at \$1.32½, the more general asking rate has been \$1.35, with sufficient sales to establish the quotation. Some lots have been withdrawn from the market under instructions from interior shippers. Medium have had jobbing sales during the week at \$1.15, \$1.17½ and \$1.20, but only very fancy, well

screened lots have reached the latter figure; the feeling has seemed to be a little better toward the close. Pea still moving rather slowly, and buyers have had no difficulty in supplying their wants at \$1.12½. It has been an irregular and unsettled market for Red Kidney. The early export orders were light, and some receivers sold at \$1.55 f. o. b.; later more goods were wanted, and with the available supply only moderate business was done at \$1.57½ @ 1.60, the outside price being quite extreme, however. In the meantime there was stock of equal quality selling to dealers at \$1.45 @ 1.50, and fair lots in second hand packages for less. A little more confidence is felt at the close, and yet business is likely to be quiet next week. Only a few White Kidney here, and this enabled sellers to get a little more money from exporters. Tule Soup have further declined under strong pressure to sell; one or two good size lots of bags were closed out at \$1.30, but there are no more offering at the price, and for prime quality in bbls. it would be difficult to shade \$1.40. Yellow Eye practically at a standstill. Lima firm but quiet at \$1.30. A very light movement in green peas.

Dried Peas.

Desirable qualities of either the Green or Niles varieties are salable to as good advantage as previously quoted and are being offered very sparingly.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 60 @ 1 75 |
| Niles Peas..... | 1 40 @ 1 50 |

Hops.

The market continues to present a tolerably firm tone, with no large quantities now offering from first hands. Exports from this State by sea and rail during the past four months, or since the beginning of the current hop season, aggregate about 25,000 bales. The last steamer for Australia took 100,000 lbs., being fully 500 bales.

Good to choice, 1897 crop.....12 @ 16

Advices by mail of late date from New York give the following concerning the hop market in leading centers:

Advices from the interior of this State indicate less business, but this apparently results from the fact that growers are holding for an advance over late prices. Sales reported were in range of 12 @ 16c, generally, one or two large lots of choice reaching 17½c. For '96 hops there seems to be a good demand, and stocks have been considerably reduced. On the Pacific coast the markets are very firm. Last week's estimate of the stocks still unsold prove to be too high; there are probably not over 35,000 to 45,000 bales left, and of these at least 50 per cent are of very inferior quality. Regarding the local market there is no change of importance. Brokers have been selling a fair quantity of stock, dealers booked some new orders from brewers, and exporters have been looking for desirable lots of both '97 and '96 growths. A majority of the samples from all sections are not attractive, and that has interfered a good deal with business. A very confident holding is noted, and while values are not quotably higher, it is becoming more difficult to secure hops at the rates recently current. Both mail and cable advices from London report a very satisfactory movement at better prices, and the latest cables from Germany are very strong.

Wool.

The local market remains quiet, but that it will long continue so is not probable. There is a healthy tone, with prospects of a pretty

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thorough clean-up at about current rates before the season closes. A prominent local house, in an annual review, says:

Reviewing the conditions of the Wool and Sheep interests of the Pacific coast for the year 1897 is a labor of love to us this year. The preceding four years will long be remembered by our wool clients as years of extreme hardship in this line of business. Ever since the election of McKinley was confirmed the prospects of Wool and Sheep have grown brighter and brighter until to-day, when prices are once more up to the standard of 1890 to 1892, and therefore on a profitable basis for the producer.

The statistics for the year are given as follows:

| | |
|-----------------------------|------------|
| California clip | Pounds. |
| From Oregon and Washington | 32,534,230 |
| From Nevada and Territories | 3,944,370 |
| | 2,000,000 |

| | |
|--------------------|------------|
| Total domestic | 38,458,600 |
| Foreign in transit | 2,739,870 |

Handled here.....11,195,470
The estimated stock at San Francisco and in the interior of the State at the close of the year was about 8,000,000 pounds grease and scoured. After noting the shortage of the wool clip of Australia and the large decrease in American flocks, the circular concludes: "We see nothing but prosperity ahead, not only for 1898, but for several seasons thereafter."

| | | |
|------------------------------|----|-----|
| Oregon Valley | 17 | @18 |
| Oregon Eastern, choice | 13 | @15 |
| Oregon Eastern, fair to good | 10 | @12 |

| | | |
|-----------------------|----|--------|
| Middle County, free | 10 | @13 |
| Do do defective | 9 | @11 |
| Northern, free | 11 | @14 |
| Do defective | 10 | @11 |
| Southern Mountain | 9 | @12 |
| San Joaquin defective | 7 | @8 1/2 |

Millstuffs.

The general tendency of the Bran market was to more firmness, but quotable rates were not materially advanced. Any appreciable increase in supplies would cause easier prices to prevail. Middlings sold at about same figures last quoted. Market for Rolled Barley and Milled Corn could not be said to incline in favor of buyers.

| | | |
|----------------|----|----------|
| Bran, per ton | 18 | 00@19 50 |
| Middlings | 20 | 00@23 00 |
| Barley, Rolled | 20 | 00@20 50 |
| Cornmeal | 21 | 50@22 00 |
| Cracked Corn | 22 | 00@22 50 |

Hay and Straw.

Additional firmness has been developed in the market for hay since last review, with sales at advanced figures, particularly of choice Wheat. The strength imparted to the market is attributable to light stocks and to dry weather in most of the hay producing sections tributary to this center. There is not likely to be much hay carried over into the coming season, although prices may not keep up to present levels. Straw is in fair supply and is not materially higher.

| | | |
|-----------------|----|----------|
| Wheat | 12 | 00@16 00 |
| Wheat and Oat | 11 | 00@15 00 |
| Oat | 11 | 00@14 00 |
| Barley | 10 | 00@13 00 |
| Clover | 10 | 00@12 00 |
| Stock Hay | 9 | 00@10 00 |
| Alfalfa | 10 | 00@11 50 |
| Compressed | 11 | 00@16 00 |
| Straw, per bale | 30 | @ 45 |

Seeds.

The same inactivity previously noted is still prevailing. Values remain nominally in same position as a week ago, quotations being based on latest reported transactions. Mustard Seed is in very scanty stock, both here and in the interior. Alfalfa Seed is still dragging, and will likely so continue until the State is favored with a heavy rain.

| | | |
|-----------------------|---|---------|
| Mustard, Yellow | 2 | 75@3 00 |
| Mustard, Trieste Seed | 2 | 75@3 00 |
| Mustard, Wild Brown | 2 | 00@2 25 |
| Flax | 1 | 65@1 90 |

| | | |
|---------------|-------|---------|
| Canary | 2 1/2 | @ 2 1/2 |
| Rape | 2 1/2 | @ 2 1/2 |
| Hemp | 2 1/2 | @ 2 1/2 |
| Alfalfa, Utah | 5 1/2 | @ 6 |

Bags and Bagging.

Asking rates for Bags and Bagging of all descriptions are practically unchanged, with trade in this line of a very slow order at present. The coming season's fleet of ships to carry Grain Bags and Jute from India to this port consists, so far as reported, of four ships, three of them being now on the way here and the fourth one is loading at Calcutta.

| | | |
|----------------------------------|-------|---------|
| Calcutta Grain bags, buyer July | — | @— |
| Calcutta Grain bags, 22x36, spot | 5 1/2 | @ 5 1/2 |
| State Prison bags, per 100 | 5 | @ 40 |
| Wool sacks, 4 lb. | 30 | @ — |
| Wool sacks, 3 1/2 lb. | 27 | @ — |
| Gunnies | 10 | @ — |
| Bean bags | 4 1/2 | @ 4 1/2 |
| Fruit sacks, cotton | 5 1/2 | @ 6 1/2 |

Hides, Pelts and Tallow.

The advanced figures established the previous week for Hides and Pelts continue in force, with market firm at the quotations and no lack of demand. Tallow market is showing steadiness, good qualities meeting with custom about as rapidly as presented for sale.

Honey.

There is a fair inquiry for all grades of Extracted and for best qualities of Comb, but more particularly for water white and light amber Extracted. Market is fairly firm at the rates prevailing. Small sales are being made at an advance on quotations, especially of choice to fancy honey.

| | | |
|-------------------------|-------|---------|
| Extracted, White Liquid | 4 1/2 | @ 5 |
| Extracted, Light Amber | 3 1/2 | @ 4 |
| Dark White | 1 1/2 | @ 2 1/2 |
| White Comb, 1-lb frames | 7 1/2 | @ 9 1/2 |
| Amber Comb | 4 | @ 6 |

Beeswax.

Market is very lightly stocked and is as firm as at any previous date this season. Small orders cannot be filled at figures quoted.

| | | |
|-------------------------|----|------|
| Fair to choice, per lb. | 22 | @ 24 |
|-------------------------|----|------|

Live Stock and Meats.

Beef is not in large supply, but there is enough to supply the demand, which is not very brisk at current rates. Mutton has been ruling steady, with no glut of offerings and none anticipated for some time to come. Hogs have been selling to fair advantage, especially those desirable for packing, quotations for latter being 1/2c higher.

| | | |
|---|-------|---------|
| Beef, 1st quality, dressed, net per lb. | 6 | @ 6 1/2 |
| Beef, 2d quality | 5 1/2 | @ 6 |
| Beef, 3d quality | 5 | @ 5 1/2 |
| Mutton—ewes, 6@6 1/2; wethers | 6 1/2 | @ 7 |
| Hogs, hard grain fed, medium | 3 1/2 | @ 3 1/2 |
| Hogs, small | 3 1/2 | @ 3 1/2 |
| Hogs, large hard | 3 1/2 | @ 3 1/2 |
| Hogs, soft and feeders | 3 | @ 3 1/2 |
| Hogs, country dressed | 4 1/2 | @ 5 |
| Veal, small, per lb. | 6 1/2 | @ 7 1/2 |
| Veal, large, per lb. | 6 1/2 | @ 7 |
| Lamb, per lb. | 6 1/2 | @ 7 |

Poultry.

About the only kinds for which the market could be said to favor sellers were choice Fryers and Broilers. Even these did not sell to quite as good advantage as during preceding week. Local receipts of other poultry were not heavy, but market was handicapped with Eastern stock, three to four carloads arriving per week and selling at tolerably low rates.

| | | |
|-------------------------------|--------|------|
| Turkeys, dressed, per lb. | 12 1/2 | @ 14 |
| Turkeys, live hens, per lb. | 11 | @ 12 |
| Turkeys, live gobblers | 11 | @ 12 |
| Hens, Cal., per doz. | 50 | @ 40 |
| Roosters, old | 3 | @ 50 |
| Roosters, young, (full-grown) | 4 | @ 50 |
| Fryers | 4 | @ 50 |
| Broilers, large | 4 | @ 50 |
| Broilers, small | 3 | @ 40 |
| Ducks, young, per doz. | 4 | @ 50 |
| Ducks, old | 4 | @ 50 |
| Geese, per pair | 1 | @ 50 |
| Goslings, per pair | 1 | @ 50 |
| Pigeons, Old, per doz. | 1 | @ 50 |
| Pigeons Young | 1 | @ 25 |

Butter.

Values for fresh butter are on a lower plane than last week, not the result of heavy supplies but mainly due to timidity of buyers. Stocks of fresh product are of very moderate proportions, but the market is still suffering from the effects of the abnormally high values established at Christmas time. Many consumers were then driven off butter altogether, while others did not use half the quantity they ordinarily do. As a result retailers lost considerable money on high-priced butter and are now buying very sparingly, but at the same time there is more changing hands than a week ago. Values bid fair to very soon get down to a steady basis. Packed butter is hardly quotable, owing to very light supplies.

| | | |
|--------------------------------|----|------|
| Creamery extras, per lb. | 27 | @ — |
| Creamery firsts | 25 | @ 26 |
| Creamery seconds | 23 | @ 24 |
| Dairy select | 24 | @ 25 |
| Dairy seconds | 22 | @ 23 |
| Dairy, soft and weedy | — | @ — |
| Mixed store | 14 | @ 16 |
| Creamery in tubs | 24 | @ 25 |
| Pickled roll | — | @ — |
| Dairy in tubs | 23 | @ 24 |
| Firkin, Cal., choice to select | 22 | @ 23 |
| Firkin, common to fair | 17 | @ 20 |

Cheese.

The market for the ordinary run of offerings is devoid of strength, the shelves of most of the wholesale depots being well filled with held cheese. The demand is light, either for shipment or local use. Fancy mild-flavored new sells to special custom in a small way to fair advantage.

| | | |
|------------------------------|--------|----------|
| California fancy flat, new | 10 1/2 | @ 11 1/2 |
| California, good to choice | 9 1/2 | @ 10 1/2 |
| California, fair to good | 8 1/2 | @ 9 1/2 |
| California Cheddar | 10 | @ 11 |
| California, "Young Americas" | 10 | @ 12 |

Eggs.

Values were not so unsettled as for preceding week, but at same time the market lacked firmness. Buyers operated slowly, as is invariably the case on a declining market, when there is no evidence of prices having touched bedrock. Were anything like an active demand to set in, stocks would speedily clean up, as supplies are by no means heavy, not being as large as they ordinarily are at this time of year.

| | | |
|--|--------|------|
| California, select, large white and fresh | 27 | @ — |
| California, select, irregular color & size | 24 | @ 26 |
| California, good to choice store | 22 1/2 | @ 24 |
| California, common to fair store | — | @ — |
| Oregon, prime | — | @ — |
| Held Eastern, as to selection and grading | 17 | @ 20 |
| Local Cold storage eggs | — | @ — |

Vegetables.

A prominent feature of the week for this market was the comparatively large receipts of Onions from Oregon, causing an easier tone to prevail than for a week or two preceding. Most of the Onions were purchased in Oregon at rather stiff figures, and holders objected to making any radical reductions in prices. Early spring vegetables were in light receipt, but most of the Peas and Beans showed evidences of frost, injuring them more or less and causing them to sell slowly.

| | | |
|----------------------------------|--------|---------|
| Asparagus, per lb. | 12 1/2 | @ 20 |
| Beans, String, per lb. | 6 | @ 10 |
| Beans, Lima, per lb. | — | @ — |
| Beans, Refugee, per lb. | — | @ — |
| Beans, Wax, per lb. | — | @ — |
| Cabbage, choice garden, per 100 | 50 | @ — |
| Cauliflower, per doz. | 65 | @ 75 |
| Corn, Green, per sack | — | @ — |
| Corn, Alameda, per crate | — | @ — |
| Cucumbers, Alameda, per box | — | @ — |
| Egg Plant, per lb. | — | @ — |
| Garlic, per lb. | 2 1/2 | @ 2 1/2 |
| Mushrooms, Buttons, per lb. | — | @ — |
| Mushrooms, Wild, per lb. | — | @ — |
| Okra, Dried, per lb. | 12 1/2 | @ 15 |
| Onions, Yellow, good to choice | 2 | @ 25 |
| Onions, Yellow, cut | 1 | @ 20 |
| Peas, Sweet, Garden, per lb. | 3 | @ 6 |
| Peppers, Green Chile, per lb. | — | @ — |
| Rhubarb, per box | — | @ — |
| Squash, Summer, per lb. | — | @ — |
| Tomatoes, Bay, per box | 40 | @ 65 |
| Tomatoes, Los Angeles, per crate | 70 | @ 90 |

Potatoes.

A steady market has been experienced for Potatoes, with a fair demand for shipment as well as for local use. Arrivals from Oregon show some increase, but this is more than off-

set by the reduction in receipts from California points. Sweets were not in heavy supply, but offerings were ahead of requirements.

| | | |
|--------------------------------|----|-------|
| Early Rose, River, per cental | 50 | @ 65 |
| Peerless, River | — | @ — |
| Reds River | 50 | @ 60 |
| Garnet Chile, Mission | — | @ — |
| Burbanks, Salinas | 70 | @ 100 |
| Burbanks, River | 50 | @ 75 |
| Burbanks, Petaluma and Tomales | — | @ — |
| Burbanks, Oregon | 60 | @ 90 |
| Garnet Chile, Oregon | — | @ — |
| Sweet River, per cental | 40 | @ 50 |
| Sweet Merced | 60 | @ 85 |

The Fruit Market.

Fresh Fruits.

The market for deciduous fruits has been very quiet for the week under review. The weather operated seriously against business in this line, being either cold or rainy most of the time. Stocks are now principally Apples, and offerings of the same include few which can be termed choice to select. Common qualities are in tolerably heavy supply and are meeting with very poor demand. This is mainly due to the unsatisfactory condition of the fruit. Some apples have been lately landed here in such bad order as to be virtually unsalable. Sound and well-packed apples of favorite varieties are selling to fair advantage, with stocks of this description light and no likelihood of the market being burdened with offerings of this sort during the balance of the season. High grade Virginia Greenings remain scarce and against buyers, with sales of select possible in a small way up to \$2.50 per box. Apples of the same variety, small but in fair condition, are offering down to \$1 per box. Spitzenberg are not quotable over \$1.25 per box, and the quality has to be decidedly fine to command this figure. Bell-flowers have about seen their day for the current season, being now in scanty supply and showing more or less decay. Pears are no longer quotable in a regular way. Winter Nelis of large size and in every respect desirable could be placed to fair advantage, say \$1.00@1.25 per box. Small and defective are hard to dispose of and are salable only at low prices.

| | | |
|---|----|----------|
| Apples, Spitzenberg, 4-tier, per box | 1 | 00@ 1 25 |
| Apples, choice Newton Pippin, 4 tier, per box | 75 | @ 1 00 |
| Apples, good to choice, 50-lb box | 40 | @ 1 00 |
| Apples, common to fair, per box | 15 | @ 35 |
| Quinces, per box | — | @ — |
| Figs, Black, 2-layer box | — | @ — |
| Pears, Common, per box | — | @ — |
| Pears, Winter Nelis, per box | 50 | @ 1 25 |
| Persimmons, small box | 25 | @ 50 |
| Strawberries, large, chest | — | @ — |

Dried Fruits.

The local market for cured and evaporated fruits is showing steadiness, with supplies in the hands of dealers not very large, especially of descriptions other than Prunes and Raisins. Offerings from first hands are showing some increase as compared with several weeks preceding. Producers who had concluded to wait until after the new year set in before marketing are now beginning to come forward, but they are asking as a rule an advance on quotations and higher prices than are obtainable at this date. Apples in boxes are in light stock and are quotable at an advance of 1/4@1/2c. There is considerable inquiry on Eastern account for Prunes, Peaches and Apricots, but business is prevented by relatively lower rates being current East than in this State, owing to goods having been consigned East and slaughtered there in the interest of buyers. Producers have had some unprofitable and unpleasant experiences in the past in the way of consigning dried fruits to Eastern markets, but it is surprising that they still continue the practice. Choice Peaches have been lately sold at Missouri river points at the equivalent of \$4.50 per cental here, while carload lots could not be furnished from any California point to-day for less than 6c. This illustrates how the consigning of dried fruits to the East spoils the market for the producer and depresses values both here and there. Demand for Prunes is now running mainly on the small and large sizes, there being little inquiry for 50-60's and 70-80's. For choice Prunes of the four sizes 2 1/2@3c is asked, but extreme views of buyers are limited to 2 1/2@2 3/4c. The last Australian steamer took about 55,000 pounds assorted fruit.

EVAPORATED OR BLEACHED.

| | | |
|---|-------|---------|
| Apricots, Royal, in sacks, per lb. | 5 1/2 | @ 6 |
| Apricots, Royal, fancy | 6 1/2 | @ — |
| Apricots, Moorpark | 7 | @ 9 |
| Apples, in boxes | 6 1/2 | @ 7 |
| Figs, fancy pressed | 8 | @ 10 |
| Nectarines, White | 4 1/2 | @ 5 |
| Nectarines, Red | 4 1/2 | @ 5 |
| Peaches, unpeeled, choice | 4 1/2 | @ 5 |
| Peaches, unpeeled, fancy | 6 | @ — |
| Peaches, peeled, in boxes | 9 | @ 12 |
| Pears, unpeeled Bartlett's, halved, fancy | 7 | @ 8 |
| Pears, halved, unpeeled Bartlett's | 4 1/2 | @ 6 |
| Pears, quartered, unpeeled Bartlett's | 4 | @ 5 |
| Pears, peeled and sliced | — | @ — |
| Plums, pitted | 4 1/2 | @ 5 1/2 |
| Prunes, in sacks, 40-50's | 5 | @ 5 1/2 |
| 50-60's | 3 1/2 | @ 3 1/2 |
| 60-70's | 2 1/2 | @ 3 1/2 |
| 70-80's | 2 1/2 | @ 3 1/2 |
| 80-90's | 2 | @ 2 1/2 |
| 90-100's | 1 1/2 | @ 1 1/2 |

Above figures are on basis of 2 1/2@2 3/4c for 4 sizes. Prunes in boxes, 1/2c higher for 25-lb boxes, 1/4c higher for 50-lb boxes.

| | | |
|----------------------------------|-------|---------|
| 4 sizes Santa Claras and equal | 2 1/2 | @ — |
| 4 sizes San Joaquin and Northern | 2 1/2 | @ 2 1/2 |
| Prunes, Silver | 5 | @ 8 |

COMMON SUN-DRIED.

| | | |
|--------------------|-------|---------|
| Apricots, ordinary | 4 | @ 5 1/2 |
| Apples, sliced | 3 1/2 | @ 4 |
| Apples, quartered | 3 1/2 | @ 4 |
| Figs, Black | 2 | @ 3 1/2 |
| Figs, White | 3 | @ 4 |
| Peaches, unpeeled | 3 | @ 4 |
| Plums, unpeeled | 1 | @ 1 1/2 |

A New York authority, under recent date, reports as follows concerning the dried fruit market in the East:

The week between Christmas and New Years is usually a very quiet one for dried fruits, and

this week has been no exception. The supply of evaporated apples continues moderate and with both jobbers and exporters showing little interest, tone is rather easy, though holders ask full late prices. Sun-dried also held with some confidence at late figures, but actual movement light. Chops scarce and firm with some stock held up to 3 1/2c, though it is somewhat extreme. Waste easy, and 2 1/2c rarely exceeded. Small fruits are in moderate supply and held steady, but movement light. California fruit arriving freely, and most kinds meet a good jobbing demand in range of prices quoted.

| | | |
|--|-------|---------|
| Apricots, Cal. Moorpark, 1897, per lb. | 9 | @ 11 |
| Apricots, Cal. Royal, 1897, per lb. | 6 | @ 8 1/2 |
| Peaches, Cal., 1897, peeled, per lb. | 14 | @ 18 |
| Peaches, Cal., 1897, unpeeled, per lb. | 5 1/2 | @ 10 |
| Pears, Cal., 1897, per lb. | 5 | @ 10 |
| Prunes, Cal., 1897, per lb. | 3 | @ 8 |

Raisins.

There is no business to record. Some inquiry from the East is reported, but buyers and sellers are too far apart in their ideas of values to admit of noteworthy transfers being effected. Bids have been made of 3 1/2c for 3-crown, 3c for 3-crown, and 1 1/2c for 2-crown, but holders are asking 1 1/2@1 3/4c more. Boxed and layer Raisins are virtually out of stock.

F. O. B. FRESNO DELIVERY.

| | | |
|---------------------------------|---|----------|
| Imperial Clusters, per box | — | @ — |
| Dhecha Clusters, per box | — | @ — |
| Fancy Clusters, per box | — | @ — |
| Boxes, London layers, 20-lb box | 1 | 00@ 1 10 |

(Usual advance for fractions.)

| | | |
|----------------------------------|-------|---------|
| Loose Muscatel, 4-crown, per lb. | 4 | @ — |
| Loose Muscatel, 3-crown | 3 1/2 | @ 3 1/2 |
| Loose Muscatel, 2-crown | 2 | @ — |
| Sultanas | 3 1/2 | @ 4 |
| Seedless Muscatel | 2 | @ 2 1/2 |
| Dried Grapes | 1 1/2 | @ 2 |

Citrus Fruits.

Orange market has dragged and has been weak, owing to weather being unfavorable and either cold or wet most of the time. Choice Oranges were not plentiful, and when buyers were in quest of such stock they had to pay full current figures. Lemon market was steady at quotations for choice to select, but common qualities dragged and were salable only at low prices.

| | | |
|------------------------------|----|----------|
| Oranges—Navel, per box | 1 | 25@ 2 50 |
| Seedlings | 75 | @ 1 25 |
| Lemons—Cal., select, per box | 2 | 00@ 2 25 |
| Cal., good to choice | 1 | 00@ 1 50 |
| Cal., common to good | 50 | @ 1 00 |
| Limes—Mexican, per box | 4 | 00@ 5 00 |
| Cal., small box | 50 | @ 1 00 |
| Grape fruit, per crate | — | @ — |

Nuts.

While business is not brisk, there is as much doing as could be ordinarily expected at this time of year. Almonds now remaining are mostly small lots, odds and ends, and values show steadiness. Walnuts are still obtainable in carload lots. Quotations are unchanged. There is some speculative demand, but only at a low range of values.

| | |
|--------------------------------------|---------------|
| California Almonds, paper shell..... | 6 1/2 @ 7 |
| California Almonds, soft shell..... | 4 1/2 @ 5 |
| California Almonds, hard shell..... | 2 1/2 @ 3 1/2 |
| Walnuts White, paper shell..... | 6 @ 6 1/2 |
| Walnuts White, soft shell..... | 6 @ 6 1/2 |
| Walnuts White, Cal., standard..... | 5 @ 6 |
| Chestnuts, Cal. Italian..... | 4 @ 5 |
| Peanuts, Cal., fair to prime..... | 4 @ 4 1/2 |
| Peanuts, Eastern hand-picked..... | 5 @ 6 |
| Pine Nuts..... | 7 @ 8 |

Patrons of Husbandry.

New Year's Celebration by Stockton Grange.

New Year's Day was celebrated by Stockton Grange with an all-day session and a very large attendance of members. Lodi, Woodbridge and Independent Granges were well represented. At noon a recess was taken and the members and invited guests marched to the banquet hall and gathered around the tables, which were abundantly filled with all that was necessary to make a genuine harvest feast. When that duty was performed Grange re-convened in the Assembly Hall in open session. The W. M. introduced Bro. E. C. Shoemaker of Tulare Grange, Steward Cal. State Grange, as the installing officer, who in his remarks stated that Tulare Grange, upon being informed that he had been invited by Stockton Grange to act in that capacity, appointed Bros. Shoemaker and Tuohy a committee to draw up the following address of greeting:

Worthy Master, Brothers and Sisters of Stockton, Woodbridge, Lodi and Independent Granges: I bring you fraternal greeting from Tulare Grange.

Worthy Brothers and Sisters, we congratulate you on your fealty to our Order. Organized as it is for the betterment of all engaged in the calling of agriculture, surely it is a worthy and laudable purpose. Stockton Grange is to be congratulated on its long and faithful service in the cause. Here let me say you know how well you have done, how well you are now doing; the eyes of the fraternity are upon you; your example is an incentive to good and faithful work in sister subordinate Granges. Tulare Grange avails itself of this opportunity of congratulating you, of saying to you, we are with you in all your laudable efforts as Patrons of Husbandry; of saying to you, be not weary of well doing; of bidding you good speed in the noble cause for which we are all working.

On referring to the records of the Order of Patrons of Husbandry of California I find Stockton Grange No. 70, P. of H., Cal., was organized on the 12th of August, 1873; J. W. A. Wright Deputy, Andrew Wolf first Master. Amongst the long list of charter members I find the names of our very worthy Brother and Sister W. L. Overhiser. After a lapse of more than twenty-four years it is more than pleasant to find them still zealous members of Stockton Grange, still devoting their best thoughts and efforts to the cause they love and we all love so well. May their days of usefulness be long in the land.

Amongst the names of other charter members of Stockton Grange I find the name of our lamented Brother Andrew Showers. Bro. Showers at the time of his death was an active and zealous member of Tulare Grange, just as active and just as zealous as he was in Stockton Grange. He was an upright and good man and Patron. Tulare Grange will miss his wise counsel, his good advice, his prudent business methods. We mourn his loss; we cherish his memory.

Tulare Grange, by a careful, prudent, conservative course of work, is using its best efforts, through the Order of Patrons of Husbandry, to promote the good of the farming community. She earnestly desires the co-operation of all sister subordinate Granges. With this object in view Tulare Grange has made special efforts on particular lines. On these lines may be mentioned better roads to and from our farms, without additional taxation, and, as one of the best means towards good roads, wider tires on all our vehicles.

She is a consistent and zealous advocate of better literary, technical and industrial education in our public institutions of learning in the science of agriculture. She believes the object of education is the preparation of youth for the duties of life; that education should qualify our youth to fulfill and perform such duty, in whatever line it may be; that technical and industrial

education is essential to this; that this industrial education will best fit the student for the duty of life, will promote his happiness and prosperity, will aid morality, will make good citizens. The fierce competition in agriculture in the United States which the American farmer now has to contend with can only be met by more scientific methods and intensive farming. To this end better education in the science of farming in our public institutions of learning is essential.

Sisters and brothers, each and every one of you, we sincerely wish you a very happy, prosperous New Year and a long life of usefulness and health. Fraternally,

TULARE GRANGE.

Instrumental music by Sis. Delia Kerrick was followed by the installation of officers for the ensuing year, Sis. Lou Overhiser assisting: Master, N. H. Root; Overseer, J. B. Harelson; Lecturer, Sis. I. E. Leadbetter; Steward, Wm. H. Overhiser; Assistant Steward, John L. Beecher, Jr.; Chaplain, Sis. A. Ashley; Treasurer, Joseph Adams; Secretary, U. T. Root; Gate Keeper, Sis. Eva Sturcke; Ceres, Sis. Mary H. Root; Pomona, Sis. Cora Beecher; Flora, Sis. Burgie Harelson; Lady Assistant Steward, Sis. Lizzie S. Root.

Address, Bro. E. C. Shoemaker; recitation, Sis. Jefferson; responses by Sis. A. Ashley and Bro. J. L. Beecher; instrumental music, Sis. Anita Leadbetter; remarks, Sis. W. L. Overhiser; song, Miss Laura Root; remarks, Bro. Shattuck; instrumental music, Bro. Wm. H. Overhiser; remarks, Bro. Kerrick; recitation, Miss Amy Hickox; remarks, Sis. Lou Overhiser, Sis. Sabin, Bro. W. L. Overhiser. A general talk followed and it was voted that Stockton Grange visit Lodi Grange in a body on the 5th inst.; also a rising vote of thanks was tendered Bro. Shoemaker for the efficient manner in which he conducted the installation ceremony, and that Stockton Grange greatly appreciates the kind thoughts and well wishes extended in the New Year Greeting by the members of Tulare Grange.

As darkness was near at hand the Grange closed, with the hope that the first meeting of the year would prove to be the continuance of the prosperity of Stockton Grange and the dawn of a new era in the Order of Patrons of Husbandry. Fraternally, in Faith, Hope, Charity and Fraternity,

N. H. Root.

Installation, Initiation and Harvest Feast at Two Rock.

Thursday morning, January 5th, a class of fifteen were initiated in third and fourth degrees at Two Rock Grange. On account of the rain there were no visitors from our sister Granges of the county, except District Lecturer Winans, who faced rain and threatening clouds in order to be with us. The hall was quite comfortably filled, however, and the initiation ceremonies smoothly and beautifully performed. On invitation of our W. M., Andrews, District Lecturer Winans instructed the class in fourth degree, after which all partook of the bountiful and substantial dinner.

In the afternoon Bro. J. C. Purvine installed the officers in a beautiful manner, using neither ritual nor notes.

It was announced by the lecturer that Poultry would be discussed at our next meeting, and the succeeding ones if the interest demanded it. During the meetings in March the Silo will be discussed, and the discussion will be conducted by the pioneer user of ensilage in Sonoma and Marin counties, Bro. A. P. Martin. All the mem-



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bers who are now using silos are expected to contribute to the discussion, which will undoubtedly be a profitable one to all.

The rain we had during the night between the 4th and 5th, and during the larger part of Jan. 5th, did much good to pastures here. Crops are looking fine, and all are ahead of their work, to be which is a blessed feeling.

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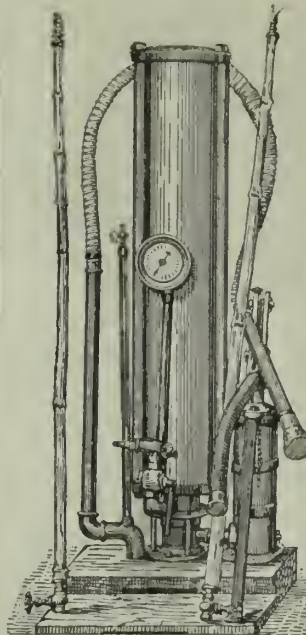
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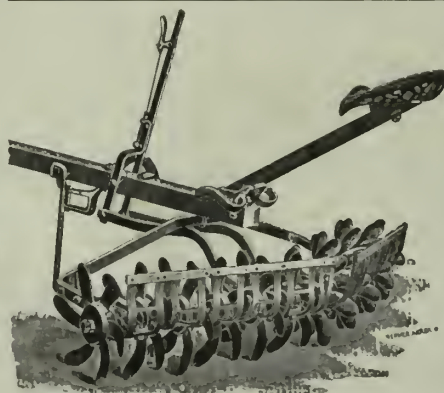
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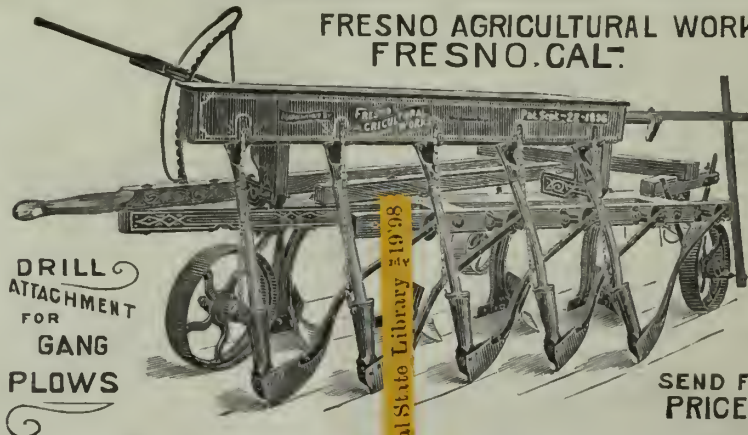
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AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 4.

SAN FRANCISCO, SATURDAY, JANUARY 22, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

California Seed Growing.

A very important branch of California horticulture which is too little known, even to our own people, is the production of garden seeds on a commercial scale. It is really a very important line of effort involving the use of much very fine land, considerable capital and the highest kind of horticultural skill. As the product is mainly seed of esculent plants, it is closely related to California's vegetable industry and is for that reason included in Prof. Wickson's work on "California Vegetables," as published by the RURAL PRESS. A carefully written chapter is given to this subject, and one of the engravings—a strikingly handsome view of a

such quantities that they hold a commanding position in the American seed trade. Aside from this large firm, there are other producers who have achieved most creditable results in the development of specialties which have given them wide reputations and contributed to the fame of the State in advanced horticulture. It is estimated that not less than 2500 acres of land are now employed in garden seed production in California.

In his book Prof. Wickson goes with some detail into the kinds of seed found most profitable and some methods employed in their production which it is not possible to reproduce at length, though they are very interesting. Pertinent to the engraving on this page it may be said that onion seed has held the

for certainly none others should be permitted to reproduce their kind. It is possible, also, that production may be curtailed this year and values proportionately advance, because of the high prices for onions caused by the short crop and the shipments to Australia and the Klondike. Seed growers who did not contract their bulbs before the advance are likely to be discouraged from the investment required for raw material.

Undoubtedly the future of the California garden seed product will depend upon how great effort the growers put forth for the improvement of the varieties they grow. Unless such effort is made there will be deterioration, most assuredly. There are great local advantages in both the growing and



YELLOW DENVERS ONION SEED FIELD OF C. C. MORSE & CO, SANTA CLARA—FROM "CALIFORNIA VEGETABLES."

California onion-seed field—is reproduced herewith.

The writer shows that the seed-growing enterprise began at the very beginning of horticultural things by Americans, that as early as 1851 John M. Horner grew a crop of 1100 lbs. of garden seeds in southern Alameda county, and that in 1857 A. F. Smith had, at Sacramento, twenty acres devoted to seed growing, and secured a yield of three or four tons, which he sold for an average of \$3 per pound. Those were times when horticultural products were worth something. About the same time, D. L. Perkins had an important seed enterprise at Alameda. About 1875, seed growing began around Santa Clara, and has been profitably followed by many—the largest growers being C. C. Morse & Co., who now have two large farms with full outfits of buildings and equipment for seed growing and seed cleaning and a large brick warehouse and business offices in Santa Clara. They handle an immense product almost entirely for distant shipment, not only of vegetable seeds, but of flower seeds, in both branches originating new strains and holding old ones to the highest type of excellence, until their reputation is world-wide, and they are producing in

leading place among California grown seeds from the beginning. It was difficult at first to convince Eastern planters of its quality. It is said that when Mr. Wilson in 1875 offered his first crop of onion seed in the East, scarcely any one would touch it, and some who did claimed afterwards that the bulbs grown from it were soft, would not keep and were inferior. The next year Mr. Wilson sent quite a quantity of the seed to a dozen or more of the leading dealers, who planted it beside Eastern seed. In the fall Mr. Wilson went East and personally inspected the crops, compared the bulbs and was able to show that in every instance California seed produced as good onions as that they had been using before. From that time on California onion seed has constantly grown in favor and great profits have been secured from its growth. There has, however, been recently rather an excessive production and prices have been low.

There has also been complaint of quality because growers have not properly selected mother-bulbs, but have taken seed from thick-necks and every other bad form. It is to be hoped that low prices have discouraged careless growers, and that the future product will be from properly selected bulbs,

handling of the seed crop. The long, dry summers afford a fine opportunity to thoroughly dry the seed and permit a large part of the harvest work to be done in the field. It is not necessary to build great barns and drying sheds as they do in the East, although the large California growers provide themselves with large cleaning houses and storage warehouses, into which to take the seed as soon as it is sacked and ready for shipment.

It has taken all these years to learn how to grow seeds and to have trained a number of men who also know how and what to do, so that in the future even greater and more interesting developments may be expected in all branches of seed growing. One hardly knows what the possibilities are, but the past has clearly shown that our soil and climate will be great aids to future accomplishment, and in our wide range of natural conditions it is reasonable to expect that many things not now undertaken may find a favorable environment, and reward the intelligent and painstaking grower.

THE fifth annual conference of the Northwestern Fruit Growers' Association was held in Portland, Or., Jan. 8.

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ALFRED HOLMAN, Editor.
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San Francisco, January 22, 1898.

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(New this issue.)

Corrugated Steel Hinges—Stanley Works, New Britain, Conn., 59.
Boss Washer—W. C. Ralig, 62.
Spray Pump—Bean Spray Pump Co., Los Gatos, Cal., 63.
Nursery Stock—A. Law, Loomis, Cal., 63.
Logan Berry—R. A. Moore, Bakersfield, Cal., 63.
Harrows—D. M. Oshorne & Co., 64.

The Week.

Weather and Crops.

The weather seems to be making desperate efforts to do something in the right line, but cannot be credited with much more than good intentions so far. The light showers are doing finely for some parts of the State, and the low land outlook is splendid; but the interior plains and some of the higher coast valleys are still in great need of a thorough soaking. It looks continually as though a little stronger pressure on the weather button would do it, and that is what people are patiently looking for.

The following data for the week ending 5 A. M. Wednesday, Jan. 19, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Last Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | 1.14 | 17.74 | 23.04 | 21.49 | 36 | 54 |
| Red Bluff..... | .34 | 6.60 | 12.05 | 13.25 | 32 | 54 |
| Sacramento..... | .21 | 5.28 | 7.19 | 9.84 | 30 | 50 |
| San Francisco..... | .37 | 5.12 | 11.14 | 11.81 | 38 | 52 |
| Fresno..... | .07 | 2.28 | 4.90 | 4.92 | 26 | 54 |
| San Luis Obispo..... | .12 | 2.52 | 9.75 | ..... | 28 | 62 |
| Los Angeles..... | .04 | 3.75 | 8.44 | 8.10 | 36 | 66 |
| San Diego..... | .39 | 3.14 | 6.99 | 4.46 | 38 | 62 |
| Yuma..... | T | 1.06 | 4.76 | 2.01 | 28 | 61 |

For Legal Raisin Grading.

The Fresno Farmers' Club has revived an old agitation looking to a uniform grading of raisins under State authority. The next Legislature will be asked to enact a law providing for box inspectors, whose duty it will be to see that the public shall not be imposed upon by an inferior quality of raisins labeled as a better class. It is argued in support of this proposition that the projected system will benefit both growers and buyers, because low-grade raisins are habitually sold in the Eastern market under false names. A bill having a similar object was passed by both houses of the Legislature during Gov. Markham's administration, but the proposed law was killed by the chief executive's veto.

A Great Beet Scheme.

There is a great deal of sugar-beet talk in the air with reference to the northern district of the Sacramento valley. Contracts, it is said on apparently good authority, have been signed by which 150,000 acres of land near Chico, Marysville and Red Bluff have been secured, and the work of erecting three immense sugar factories will be started at once. The syndicate has a capital of \$15,000,000, and intends making the venture a success, if money and experience can do it. The land secured, it is alleged, includes tracts from the Glenn ranch, the Bidwell ranch, the Phelan estate and the Stanford estate, with other tracts in smaller quantities. It is a fea-

ture of the project to colonize these lands in part with beet growers from abroad. These reports are as yet too impersonal to be wholly satisfactory, but there is unquestionably something more in it than talk.

The Local Produce Markets.

The local wheat market has been in a deep valley ever since our last report and values are a little less than last week, although there is now a better tone than for several days back and the situation seems to be a shade more promising. Local buyers have alleged the scarcity of ships and a weak market abroad as reasons for their indisposition to invest. England is about the only foreign country which is now taking wheat. The speculative market is a little firmer on the ground of the present drouthy outlook in the wheat counties. This possibility of lack of rain also affects other cereals. Barley is firm at higher values; oats, corn and rye are holding their own well.

There is no change in dried fruits. Prunes and raisins are asked for, but bids are at too low a figure. Choice fresh apples are scarce, but values are held back by abundance of medium and low grades which are being pushed by retailers wherever possible, as they can be bought very low.

Beef is quiet and steady. Hogs are higher and likely to hold values until the run of dairy hogs sets in a few weeks later. Butter is going down a little, although dairy butter is selling higher than a year ago because there is very little in storage. Eggs are dropping naturally as the local product increases. There is, however, no large supply in store and no Eastern eggs in now.

Wool is strong, though not particularly changed. The outlook for the coming clip is good through advancing Eastern and European markets. Hops are firm and unchanged. There is some foreign demand, but no buying here except to fill orders.

Fruit Growers' Conventions in the South.

A letter has been received by the Redlands Horticultural Society from Secretary Lelong, of the State Board, saying that a series of State Fruit Growers' Conventions would be held in southern California during the spring months. He suggested that a session of two days be held in Los Angeles, one of one day each in San Diego, Riverside and Redlands, the local horticultural organizations to co-operate with the State Board.

Farmers' Club Organized at San Jose.

On Saturday last a Farmers' Club was organized at San Jose with a charter membership of 100. Officers for the ensuing year were chosen as follows: President, W. B. Craig; vice-president, Judge J. R. Lewis; treasurer, Rush McComas; secretary pro tem., E. M. Ehrhorn.

The executive work of the Club will rest with a committee of thirty members, subdivided into committees of five, each to take up some special department of farmers' work.

Free Government Seed Distribution as Usual.

At Washington, on the 13th, there was the usual effort to defeat the clause in the agricultural bill providing for free seed distribution, but, as usual, it failed, the majority against it in the House of Representatives being 136. The appropriation is \$130,000, and distribution will be made by the Agricultural Department, as usual. Anybody wanting a share in the "divy" should address the Representative of his Congressional district at Washington.

Model Highway Project.

San Mateo county will shortly vote on a model highway project similar to that recently approved by the voters of Sacramento county. The proposition is to make a perfect road—with winter, summer and bicycle tracks—from the northern to the southern line of the county, the project being part of the Boulevard scheme to connect San Francisco and San Jose. The sum required is \$310,000, for which it is proposed to issue bonds.

Answers to Rural Readers.

Treatment for Cowpox.

TO THE EDITOR:—The virulent cowpox has affected some of my cows very seriously, causing the udder to swell and to give clotty milk for a month, and now and then to dry up altogether. The best milker in the herd has been sick about six weeks, the udder being still swelled (not cracked) and one teat discharges only pus and foul water, while she is in poor flesh and low spirits. One cow regained her milk in one-half the udder but dried up altogether in the other half, and after continuing in this condition two or three weeks, has now almost quit giving any milk at all. *Howard's Dairyman* defines the symptoms as those of virulent cowpox, and prescribes a physic of salts and ginger, which was given to those affected the worst, but I am at a loss to know what further to do. No other herd in the vicinity has been so severely affected as mine, though in a milder form the disease is well known here. Will

Dr. Creely tell what to do, and will the cows ever return to their milk-giving.

P. P. MARTIN.

Compton, Los Angeles Co.

Inject two times daily into the affected teats two tablespoonfuls of Marchand's peroxide of hydrogen. Over the swollen or sore surface apply tincture of iodine once daily until a scurf appears, then cease the iodine and apply zinc ointment. Spent hops or flaxseed poultices are also beneficial. When the hydrogen is injected hold the teat for three minutes so the hydrogen can't escape. Give internally once daily one ounce of Fowler's solution of arsenic. Feed mash, grass, etc., but no dry feed. Separate the affected cows from the healthy ones. They will recover their milk again, but some don't recover until they calve again.

E. J. CREELY.

A Debilitated Horse.

TO THE EDITOR:—Dr. Creely will greatly oblige me by advising treatment for my horse. The subject is a gelding ten years old, weight about 1100 pounds and of good breeding. About five months ago he was overheated or perhaps watered in a careless way by the party then owning him, and ever since he is panting after even a short drive and will look quite exhausted. The horse is in a rather good condition, eats hearty of hay, bran and grass, and has no cough or heaves. Some people tell me that a horse like this is worthless, while others claim that he will come over it.

A. M.

San Jose.

This is an organic disease and the best treatment would be complete rest and one quart of thick flaxseed tea once daily in a bran mash. It would be advisable to have some local qualified veterinarian make a physical examination and advise treatment.

E. J. CREELY.

Dog With Skin Disease.

TO THE EDITOR:—I have a very fine fox terrier about one year old that is troubled with a skin disease which breaks out in dry scabs. They first appeared on nose, top of head and tips of ears, but in the last month several have come out on body. Her skin is never clean but always seems to be covered with dandruff. I do not bathe her often, as I am afraid the disease might be contagious. She is a bright, active dog and gets lots of exercise and plenty of nourishing food. I feed her rice, oatmeal and cracked wheat, cooked with meat, and sometimes a very little raw meat. What is the disease, and what the remedy?

"SUBSCRIBER."

Wash her two or three times weekly in one bucket warm water, three tablespoonfuls creolin; make a mixture of whale or olive oil, three parts; creolin, one part, and rub into affected parts after washing. A complete cure will be made. Five drops Fowler's sol. arsenic will assist a cure.

DR. CREELY.

Weather and Crops.

SUMMARY OF THE REPORT OF THE U. S. WEATHER SERVICE FOR THE WEEK ENDING JANUARY 18, 1898.

General Summary.

The rainfall for the past week has been generally below the normal. In the northern portion of the State, naturally, the deficiency is most marked. The rains of the 12th and 13th were wide spread, and, while moderate in amount, were very beneficial and served to allay somewhat the anxiety of farmers. A good soaking rain is, however, much needed. The rain of the week permitted the resumption of plowing and seeding, which in many localities had been stopped. The temperature was below the average, and in many sections as much as five degrees colder. Frost was frequent, but the damage appears to be slight. The cold weather has also retarded the growth of feed, and in some localities the outlook for feed and hay is discouraging. The cold weather will prevent premature budding of fruit trees. Orchardists and vineyardists are pruning. A little grain has been rotted in the ground, but on the whole it is doing fairly well. Orange growers are busy picking fruit and shipments will be large.

SHASTA.—Cloudy, with occasional light rains. Warmer.
BUTTE.—All crops doing well.
GLENN.—Few light showers, not enough to do much good. Farmers anxious for rain.
EL DORADO.—No damage from frost.
SOLANO.—Orchardists making preparations to spray trees. Present weather very good for keeping buds back. Growing grain retarded by frosts.
SACRAMENTO.—Cold and frosty. All grain has been put in and is doing well.
YOLO.—Five inches of snow fell Thursday. Rain at end of week very beneficial.
SAN JOAQUIN.—Prospects good for large crop. Heavy frosts have done little damage to wheat by rotting it in the ground.
FERNANDO.—Heavy frosts; little rain. No damage except retarding growing feed.
KERN.—Rain, snow and frost. Grain and feed coming up nicely.
KINGS.—Still very dry. Light showers Sunday. Need rain badly; farming at a standstill. Pruning.
FRESNO.—Cold, with severe frosts. Rain on 9th and 12th beneficial to wheat and barley. Grain in the ground in good condition, but at a standstill.
SONOMA.—Several good showers. Grain and feed doing well.
ALAMEDA.—Farmers busy plowing and seeding.
NAPA.—Cold and frosty, with light rain. Farmers seeding; orchardists pruning. Increased acreage of wheat.
SAN MATEO.—Crop prospects good.
SANTA CLARA.—Condition of crops very promising. Rain very beneficial; more needed. Barley all seeded.
SANTA CRUZ.—Rain did much good. Prospects of good crops.
MONTEREY.—Light rain did no good to crops or grass. Farmers getting discouraged.
SAN LUIS OBISPO.—Cool, with light rains. Farmers commencing work slowly. More rain needed.
SANTA BARBARA.—Three-fourths of an inch of rain. Cold. Unless good rain soon hay crop will suffer. Grass and seeded grain need warmer weather.
LOS ANGELES.—(Los Angeles)—Sufficient rain fell during past week to start plowing, and was of great benefit to grain already started. Cloudy, cold and frosty, not severe enough to damage citrus or other crops. (Pomona)—Cold nights, with heavy frosts. Very little damage to fruit. (Duarte)—Frost on three nights, but no damage to oranges. Growers busy picking oranges. (Bassett)—Seeding proceeding rapidly after the rain. Grass coming up.
RIVERSIDE.—No damage to citrus crops by snow and rain. Raisins have done much good in back country. Plowing has commenced in all sections. Shipping oranges freely. Recent rain has started some barley.
SAN DIEGO.—(San Diego)—Light frosts on 13th and 14th. Rain has done much good to seed already sown and put unseeded land in excellent condition for plowing. Acreage of grain is double any previous one in the county. (Otay)—An inch and a half of rain. Plowing and seeding again in full blast.

AGRICULTURAL REVIEW.

CALIFORNIA.

Alameda.

PLEASANTON is agitating the sugar-factory question. A considerable part of the beet supply of the Alvarado factory comes from the Pleasanton district and the people see no reason why they should not have a factory of their own.

ALAMEDA ORANGE GROVES.—A gentleman from an Eastern State desired some orange blossoms for a certain event a few days ago. He called upon a San Francisco florist for them, but none were to be had in the city. Los Angeles was telegraphed to, but word came back that the recent frosts had so badly damaged them that none were to be obtained in that part of the State. As a last resort the florist sent to Mr. H. A. Maybaw at Niles. That gentleman took his basket and went into his orchard and picked the necessary blossoms.—Irvington Press.

Contra Costa.

It is understood at Port Costa that McNear is to build a mammoth flouring mill at that place.

Fresno.

LIVESTOCK MATTERS.—Dr. J. Graham, Fresno county veterinarian, has just made an official report, from which we take the following: "During the last six months over 10,000 sheep, hogs and cattle have been slaughtered in Fresno county for home consumption. The following is an exact list: Sheep, 3816; hogs, 3509; cattle, 2518; veal, 625. Besides using this great quantity of meat, about three beaves a week have been shipped in from San Francisco. * * * Miller & Lux should be prevented from driving through the county their cattle infected with splenic or Texas fever. This is one of the most dangerous of infectious diseases with which cattle may be afflicted. The disease is spread by affected cattle being allowed to pass over the range, and a trail of disease is left behind to infect the next herd that may be pastured thereon. * * * I think more attention should be given to seeing that animals have sufficient water. I have made several observations in regard to the effect of lack of water. A bull weighing 1200 pounds was allowed to go six hours without water on a warm day and lost 100 pounds. Twenty-five cattle driven forty miles lost 1750 pounds. Any cow left without water for twelve hours will lose 100 pounds, and sheep will lose more in proportion."

Los Angeles.

AN OBJECT LESSON.—An object lesson in fumigating for orange scale and other fruit pests was shown recently at Ontario. The orchard of Col. J. T. Paul was very badly infested with the scale, and when the Horticultural Commission began its season's work this was one of the first attended to. After several weeks to give animal life a chance to show itself, if there was any left under the tent at the end of the fumigating process, Col. Paul collected samples of orange leaves from all over the orchard, from the tops, middle and bottom of the foliage, seeking those also from the most protected nooks and crannies, and had them examined under the strongest compound microscopes in use in the Claremont college. The strictest examination failed to find a solitary trace of animal life in any form on the samples. The gas not only kills every form of insect life, from scales to bugs and beetles, but birds caught under a tent when it is thrown over a tree have been killed instantly.—Los Angeles Herald.

Monterey.

SOME BIG SUGAR FACTORY FIGURES.—The magnitude of Claus Spreckels' sugar factory at the county seat may be realized when it is understood that when completed it will be five stories high, 582 feet long and 102 feet wide. It will contain 3500 tons of steel, 4,000,000 bricks and 800 squares of slate. The boiler house will be 559 feet long, 68 feet wide and 22 feet in height. It will contain nearly 1,000,000 bricks, twelve boilers, four economizers, two steel smokestacks 216 feet high and 13 feet in diameter. Each stack weighs 1000 tons. The machine shops will be 559 feet long, 40 feet wide and 22 feet high, and will contain 60,000 bricks. The dimensions of the oil house will be 20x32 feet, the warehouse 800x200, and the scale house 20x52 feet. The main office, the dimensions of which are not yet known, will be a large structure. The factory will crush 3000 tons of beets every twenty-four hours, and consume 1200 barrels of oil. The output of sugar for the same length of time will be 450 tons.—Gonzales Tribune.

Orange.

WINTER IRRIGATION.—Not a year passes with Orange county fruit growers that they do not adopt and advance new ideas in regard to fruit growing. The latest is winter irrigation. More of it has been done during the past five weeks than was ever known before; and careful growers have taken advantage of every bead of irrigating water possible. They claim that by thoroughly soaking their orchards at this time, the most natural season of the year for them to be watered, not only produces better results than later irrigation, and is much cheaper, but in case of a dry season and a scarcity of water during the summer months, the trees are in a condition to stand it. The water companies report higher December receipts than ever before.—Santa Ana letter.

HORSE DEMAND AND SUPPLY.—Does it ever occur to the farmers of Orange county that they are fast losing their old-time prestige as being the breeders of the finest and best horses in southern California? It is but a few years since this was a generally acknowledged fact, and, when a man living anywhere within 100 miles of Orange county wanted to buy a good horse, he came to Orange county for it. Of late years this is not the case. The depressed condition of the horse market during the past half dozen years is, no doubt, largely responsible for our Orange county people losing to a considerable extent their interest in this industry, but the outlook has improved so much that no time should be lost in resuming the breeding and rearing of fine horses.—Santa Ana Blade.

An experimental planting of twenty acres of tobacco will be made near Anaheim this coming season.

Sacramento.

FLORIN FRUIT GROWERS' ASSOCIATION.—The Florin Fruit Growers' Association has elected directors for the coming year as follows: W. H. Robinson, W. O. Davies, D. Reese, C. L. Buell and J. M. Davies. The officers of the board are: President, W. H. Robinson; Secretary, D. Reese; Treasurer, W. O. Davies. Florin has become a fruit-shipping point of some distinction, as may be seen by the following resume of its business in this line from July 1st to October 18th, 1897: Ninety-seven cars of fruit were sent East from here, through the Association, 85 per cent of which were grapes. The points of shipment and number of cars were: Chicago, 5 cars; Kansas City, 4; Minneapolis, 3; New York, 43; Boston, 24; Philadelphia, 9; Pittsburgh, 2; Baltimore, 3; Salt Lake, 3; Denver, 1—a total of 90,477 packages. The gross sales amounted to \$91,280; the transportation charges (freight and refrigeration) to \$48,200. The paid commissions amounted to \$6389.60. The lowest price received for any one car was \$743, the highest price \$1481. This car was sold in Boston on October 30th. It will be noticed that the prices received are much lower than in former years. Two reasons are given for this lamentable fact by the officers of the Association. First, the grapes were not of so good a quality, all of them being more or less injured

by sunburn and beetles. Second, hard times and scarcity of money in the East.—Florin letter.

San Joaquin.

GOOD SEASON FOR GRAIN.—The Stockton Mail declares that the next grain crop in the San Joaquin valley promises to be the heaviest for years. J. L. Beecher, a well-known farmer, is quoted as saying: "The prospects for a big grain crop were never better than they are at the present time. We need more rain, though, but there is little or no doubt that we will get more. The heavy frosts of the past week or more have done a little damage to wheat by rotting it in the ground, but not near as much as people seem to think here in town. After wheat has once sent up a sprout it will stand a good deal of freezing. My place is on the black lands the other side of Mormon slough, and I look for a splendid crop of grain; that is about all I raise, though I have a small orchard for my own use. That looks well. I was up to Glick's place and also Anderson's the other day. Pruning is in progress there, and the prospect for a big fruit crop is excellent. I am of the opinion that it will be the best year we have had since '91." G. R. Byas is quoted as follows: "I am out back and forth a good deal, and I find that the prospects all over the county between here and the other side of Farmington are first-class; never better, in fact. For seeding and plowing things have never been in better shape, but everywhere they say that there should be a little more rain. Nobody seems to be alarmed on that score, however. To my notion, things never looked better." Another well-known farmer, J. W. Grave, is thus quoted: "My stand of 700 acres of grain is the best I ever had. In my opinion, San Joaquin county will have the highest grain crop in years next harvest. Everybody is looking for a splendid season. I hear that some people are complaining that the frost has rotted a little of their wheat by freezing it in the ground. There is no sign of rot in my wheat. I attribute this to the fact it was all put in with drills, and none of it is plowed under. In this way the wheat germinates rapidly and gets out of ground, which prevents the frost from doing any damage. I have put in my wheat that way for several years, and I think that's the only way to do it. Of course, we need a little more rain, but up to the present time we have never had the soil in better condition for seeding and plowing. As to fruit, it is too early to tell much about that yet, but beyond doubt the severe frosts have been a benefit, in that they have held the fruit back, thus preventing it having gone so far as to be injured by late frosts in the spring. The frost has also had the effect of killing off fruit pests in a large measure."

BET CULTURE URGED.—The men representing the sugar companies understand their business, and if they were not confident that the venture would pay they would not waste time and money in attempting to induce the farmers to take hold of it. Wheat raising is a good business, but when prices are down or crop prospects poor, it is advisable to have something else to turn to without having to waste time in experimenting. Let as many farmers as possible devote a few acres to beets. They will make some money and aid in establishing a business which in turn will aid them in making money in the seasons to come, or in selling their lands for a good price when they make up their minds to retire from farming.—Lodi Sentinel.

Santa Barbara.

BIG WHEAT ACREAGE.—In spite of the fact that there has been almost no rain, the acreage planted to cereals is in excess of last year. Stock has not suffered materially, last year's range feed not having been destroyed by rains. The limit has about been reached, however. Citrus fruits escaped damage by frost.—Santa Barbara letter.

BEANS DOWN.—Beans are away down and lots of them yet on hand and no shipments being made worth mentioning, and, to cap the climax, transportation rates went up on Monday to all points east of Chicago. For some time past the rate to Chicago has been 75 cents per 100 and 50 cents to New York. Shippers had been in the habit of rating to New York and then back inland as far as Pennsylvania and Ohio points and still coming under the Chicago rate.—Santa Maria Times.

OUTLOOK FOR CELERY CULTURE.—Mr. C. A. Ross, formerly of Santa Rita, now of Bolsa, Orange county, in a private correspondence, says he is employed in the celery fields at that point, where it is grown for the Eastern market and sent forward by the carload; that it is worth \$300 per carload, f. o. b.; that one of the largest celery growers from that place has leased 500 acres for growing celery in Arroyo Grande valley. Mr. Ross says that there are thousands of acres of the choicest celery lands in the Lompoc valley if water could be gotten to the land. He also says that a low temperature like ours is conducive to a better quality of the plant than is secured in the warm regions of the southern counties. When the proposed irrigation project, now incubating, is consummated, this may become a most desirable point for the production of all kinds of vegetables in demand in the East that cannot be gotten ready for market there until the summer months.—Lompoc Record.

Santa Clara.

ABOUT HOLDING FRUIT.—The Santa Clara county Real Estate Review has this to say about the policy of holding fruit: "Our observation is that it is best to sell dried fruit as soon as it is ready for the market. Those who hold for advance in price seldom gain. When the harvest is progressing the large dealers send representatives here commissioned to buy as many tons as may be calculated to meet the demands of each dealer. As a result, there are a dozen or more buyers in the field, each aiming to secure his requisite quantity as soon as possible. This makes a good competitive market while it lasts, and, to some extent, stimulates the price. As soon, however, as the various buyers have completed the purchase of their respective quantities they depart, and, consequently, the apparent immediate demand falls off. Santa Clara county fruit, by reason of its superiority, is preferred by the great fruit dealers of the country; but often it occurs that these buyers are forced to go to other counties, owing to the disposition on the part of many of our producers to hold on speculation. Those who sold at the proper time this year realized about \$30 per green ton. Those who have held their fruit perhaps cannot realize quite so good results now, although it is true they may do better as the season advances. However, the cost of holding runs against this probability, and, taking all things in consideration, it is safer to sell when the buyers are here, ready and prepared to buy."

SAN JOSE, Jan. 14.—George Y. Bollinger has been elected president of the Santa Clara Valley Agricultural Society. P. P. Austin and William Boots have been chosen directors. Reports showed the society to be in debt \$13,000. A plan of reorganization is now being considered, by which it is proposed to bring the society out all right.

Santa Cruz.

PAJARO VALLEY FRUIT NOTES.—The Newtown Pippin is the big seller for plantings of new orchards. * * * Overland apple shipments to date this season are 228 carloads. * * * James Waters has had most gratifying results with the Bismarck, an Australian apple. Trees have borne fruit the first year out, and are heavy with fruit spurs. It is a large apple and a good keeper. * * * Complaint is made by Eastern retailers relative to fraudulent packing of apples in barrels. First quality stock will be on the top and bottom, with culls between. This is not a new complaint about barrel-packed apples. If the California method of box packing was gener-

ally adopted buyers would be able to carefully inspect all stock bought. With a box the tops or sides can be taken off and the quality of the pack is quickly revealed. This is almost impossible with barrel stock. The box is a convenient, light package, and from the way it has been received in England has come to stay. Fruit should be packed for market so as to permit the most thorough inspection. * * * Soil and climate have such effects on some varieties of apples as to almost remove usual points of marked resemblance. The Bellefleurs from Gonzales, thirty-six miles south of this city, while colored like the Pajaro valley Bellefleurs, are not altogether like them in shape. The Gonzales Bellefleur is not so long, is thicker, and does not run to the sharp point which is such a marked feature of Pajaro Bellefleurs. Points of difference also appear in the Newtown Pippin from these two districts. The Pajaro valley Newtown colors later, is not so long is of greater thickness. The Gonzales Newtown is more of the shape of the Fall Pippin and has a yellow color early in the season. Though there are marked points of difference in these apples, we are informed that the nursery stock from which both Pajaro valley and Gonzales orchards were planted came from this valley. The trees are from the same stock, but the soil and climate have marked the difference in the fruit.—Pajaronian.

Solano.

PRICE OF SUGAR BEETS.—Those contemplating planting beets next spring will be interested in knowing that the Crockett Beet Sugar Company is entering into an agreement with farmers in Colusa county by which it takes the beets grown on from 2000 to 2500 acres of land and pays therefor \$4 per ton at the landing nearest the land on which the beets are grown. The beet that has 15 per cent of sugar is to be the standard, and every full per cent over that is to bring 25 cents a ton more, so that a 19 per cent beet will bring \$5 per ton, and every full per cent less than 15 will reduce the price 25 cents, so that the price of a 12 per cent beet will be \$3.25 per ton.—Benicia New Era.

Sonoma.

WINE TALK.—A. Lachman & Jacobi, the largest firm in the California Wine Association, and E. H. Lancel, a prominent wine broker, were in town Tuesday. In an interview with them nothing could be learned regarding the method the Association will pursue in common with the Corporation in establishing the price of wine, in fact Mr. Lachman denied that there had been or is promised to be any co-operation between the two syndicates. Mr. Lancel prophesied a still lower rate for wine but affirmed the interviewer's remark that the market for California's product was broadening. He said that a German buyer had purchased 200,000 gallons of heavy dry wines in Sonoma and Napa counties for export. The Rhine vintage having proven nearly a complete failure the past year, there was excellent prospect for supplying the bulk of the demand with our wines. Japan is also proving somewhat of an outlet for our surplus stock. These two dealers are here for the purpose of purchasing Sonoma county wines. Among the purchases made was the Van Koppel stock.—Santa Rosa Republican.

Stanislaus.

PROPOSED CREAMERY.—Last week a meeting of citizens was held at Wilman Bros.' Woodside farm to consider the project of establishing a creamery there or putting in a skimming station to work in conjunction with the New Era creamery, and the subject was discussed in its various lights. The skimming station idea did not meet with favor, so the plan of establishing a complete and up-to-date creamery plant was settled upon. L. Sweitzer and E. W. Heston were appointed a committee on subscriptions and in a short time had over \$6000 promised. It is proposed to make it a joint stock concern and build it without the aid of creamery promoters. But before going ahead with the work the leading creamery plants of the State will be investigated, their good points adopted and their mistakes omitted. This creamery will be located in the midst of one of the finest alfalfa districts in the State.—West Side Index.

THE SWINE YARD.

Mr. Gallup Replies to Mr. Waite.

TO THE EDITOR:—In January 1st issue of RURAL PRESS Mr. Waite, the Berkshire breeder, takes exception to what I said in my essay at the University Farmers' Institute at Fresno. He says I give no facts nor figures to prove that the Poland-China is given first place among swine. The assertion was made from a commercial standpoint. There are more Poland-Chinas raised and sold in the great corn belt than all other breeds combined. The State of Iowa raises more Poland-Chinas than Berkshires—those farmers do not raise hogs for fun, but for money, and they are men of brains and undoubtedly know what they are doing. Mr. Waite further states that the Berkshire breeders challenged the Poland-China breeders to show at the Illinois State Fair ten head, and the challenge was not accepted. The Poland-China breeders compete against each other and not against other breeds. They would not have accepted the challenge if it had been made by the Chester White breeders.

I can remember when the Poland-China breeders were accused of trying to steal the color of the Berkshire, that is the six white points; things are changed somewhat now. If I remember rightly, one of our California Berkshire breeders showed some Berkshire pigs at our State Fair, with white spots on their bodies, and the drop ear, trying to steal our color and style of ear.

I breed Poland-Chinas because I can sell them. Mr. Waite undoubtedly remembers one day at the last State Fair when we were looking at the Poland-China boar "Gallup's Model," owned by Mr. Waite, which had been awarded first in class and sweepstakes. Mr. Waite remarked, "Did you ever see such a back and such hams on any hog in your life. I did not make any reply because I had bred and sold "Gallup's Model" myself to Mr. Waite, and I had also bred and sold "Money Order," half brother to "Gallup's Model," to Mr. C. H. Sessions. "Money Order" was competing and making a loud call for sweepstakes. I did not like to praise stock of my own breeding, but I thought just as Mr. Waite did, that I never saw two better hammed hogs in my life.

The Poland-Chinas have better hams, and as they are bred now have just as good backs. The old style

of swaybacks are a thing of the past; still, a great many people are apt to remember and even class them now as a rough, ill-shaped hog.

The Berkshire was formerly inclined to go wild when turned out to rustle for himself, and a great many men say they cannot raise them on that account; they remember them as they were years ago, and not as they are now. I admire the Berkshire, his beautiful form, fine style and good feeding qualities; and for his being wild and unmanageable, that is a great mistake; he is a high-tempered animal and requires kind treatment. Our Poland-Chinas are high-tempered, and I would not breed them if they were not. A lazy animal is apt to be a poor feeder and the mothers inclined to overlay their young.

The Berkshire, as bred by the American breeders, are good sucklers and most excellent mothers, and in the hands of our American breeders to-day are much better than they were twenty years ago, and, further, the American Berkshire breeders do not have to go to England to get good individuals to improve their herds; and I am of the opinion if our Secretary of Agriculture would take off his glasses he would see that the Berkshire possessed sufficient supply of lean meat to satisfy the appetite of any one that loves good pork, and he would further understand that every ship that sails the seas carries quantities of heavy fat pork for the sailors to eat. California is the natural home for the Poland-China hog, and his thick, fat sides are just what the Alaska gold miners will have to have, and there will be a market for one million heavy, fat hogs the coming year, and our Poland-China friend will fill the bill.

I still think that the Poland-China is king of all breeds. I will borrow a few lines from a paper read by D. Gibson at the annual meeting of the American P. C. R. Co. in 1895, hoping that Mr. Waite will read them, and feel more friendly towards my friend, the Poland-China. I will ask him to

Bestow on them his tender care
And give them beds of straw;
They'll pay him back, with interest, too,
For that is nature's law.

Their backs are broad, their legs are short,
Their heads are beauties, too;
The hams are deep, their flesh is sweet,
Their tails are curly-cue.

So sweet, and with lovely ways,
They are pictures of content.
They pay the mortgage off the farm,
And always make the rent.

These models of the modern swine
And beauties of creation
Are carried in the palace car
And cross to other nations.

The lords of all the kingdoms there
Admire this noble breed.
They grow so large, with finish, too,
And take so little feed.

The Poland-Chinas are our friends
Through adversities thick and thin.
We will breed the best, and take no risk.
They are always in the ring.

The race was won, not by the hare,
That boasted of his speed,
The Poland-China wins at last
Over every other breed.

ELIAS GALLUP,
Breeder of Poland-China Swine.

Hanford, Cal.

THE DAIRY.

Ways of Milking.

It goes by general consent that everyone knows how to milk, and not enough attention is given to determining whether everyone milks in the best way. At a recent meeting of the British Dairy Association, Mr. Primrose McConnell gave his views on milking, which it will be interesting to look over while the cows are coming up the lane. We have learned from sad experience that the yield of milk from a cow, and even to a large extent, the quality of the same, depends very much on the manner in which she is milked. Confining our attention at this point to the actual handling of the teats for the forcing out of the milk, there are four ways that may be adopted, though two of them may be combined at the one operation. These four are: (1) Stripping, (2) squeezing, (3) wet method, (4) dry method.

The Stripping Method.—In the stripping method the fingers and thumb are forcibly drawn down the teat and the milk squirted out; but the operator resembles a man at the pump, from the way in which his arms, elbows and shoulders are moving, and he sometimes gives one the idea that he is drawing the milk down from the very horns of the cow. The teats, to stand this sort of work continually, would require to be made of india rubber, and not living tissue, and there is no wonder that where there is a scratch or a chap, or any slight soreness on them, it is torn open every time of milking, and the animal goes down in yield, and has to have the hind legs strapped together to prevent kicking—for some men,

following this style of milking, would make the celebrated bulls of Bashan themselves kick.

The Squeezing Method.—The squeezing method (or "nievling," as it is called in Scotland), is infinitely superior. In it the operator grasps the teat and squeezes it only, without any pulling—the arms and elbows never moving. There is no jerking and no cessation of the sound, for the stream is started from the one teat before it is stopped to take a new hold at the other. The principal superiority of this method lies in the fact that it deals gently with the teat, so that where there is a tendency to soreness, the sores are not continually being reopened, and thus the animal stands more quietly during the operation. Sores heal up more quickly, new ones are not formed, and, consequently, the animal will be a better milker. I have seen a cow stand quite quietly to a "nievling" milker, when she would get wild with one employing the stripping method.

Wet and Dry Methods.—The wet or the dry method may either of them be employed, combined with either of the two others above mentioned. As no one ever thinks of taking a bucket of water into the byre for the purpose of wetting the hands, it follows that in practice the wetting is done by squirting some milk on them, and this is usually described as a nasty and injurious habit. In this question of wet vs. dry milking, however, there is likely to be a considerable difference of opinion. If a person milks on the tugging or stripping system, I should not care to have him also adopting the dry method, for the reason that a lubricant is required to lessen the friction on the teat, and the milk is the easiest of application for this purpose. Even in the squeezing system there is some friction which would be lessened by moisture. The objection to wetting the hands is that it tends to taint the milk, and, as it leaves the teats wet, they are apt to get chapped or otherwise injured. Regarding the first objection, I personally believe that the drawback is exaggerated, for the milk is not coming into contact with the hands as it issues from the orifice in the teat, and there is likely to be as much taint communicated to the milk in the pail from dry scales and dirt dropping from the hands in the dry method, as there is from drops of milk falling from the hands in the wet method. As to the evils which follow from leaving the teats wet, I have not, in my own experience, known of any; the teats and udders are more likely to contract chills and other disorders from wet weather and lying on damp ground than from being wet in the act of milking indoors. An argument which is conclusive to my mind is the fact that cows are wet milked in a state of nature; they are wet nurses to their own calves, which, in the act of sucking, wet the teats, and a great many more times daily than in the case of hand-milking. In practice, again, even if dry milking were desirable, it is impossible to obtain milkers who can use this method, and we have to put up with such as we can obtain.

Cleanliness.—Cleanliness of the milk is a great desideratum to be aimed at, and for this end some recommend that the udders be wiped or brushed before milking begins, so that any adhering straw or dirt may be removed. I should begin a little further back than this, and have the stalls so constructed that the animals should stand and lie in a cleanly fashion; and this is quite possible of attainment with nineteen out of every twenty cows. It would be out of place in this paper to digress on the proper construction of a cow stall, but I have taken particular notice of this matter in the many farms we have visited in the yearly excursions of our Association, and I unhesitatingly affirm that in more than one-half of the byres we have seen the animals have no chance of keeping themselves clean, whereas if this were properly attended to all the fuss about cleaning the udders would be unnecessary.

Gentle Treatment.—I may now take up shortly the general treatment of the cow in connection with the operation of milking. The two main points to be attended to are gentleness and quickness; indeed, of the two quickness is the chief, for a quick milker can seldom be a bad one. Where milking is done by piecework, and the tough cows are eliminated, it is customary for one person to do ten in an hour; a little longer time being required when all come together in full yield in the beginning of summer. Where it is not done by piecework, and the cows are of all sorts, it may take half an hour longer; but the more quickly it is done, the more will the milk-yielding power of the animals be stimulated. If the milk is frothed in the pail, it may be taken for granted that the speed is all right; but, if it is not frothed, then the milker is doing an injury to the cows, and, if kept to the one lot, he would put them prematurely dry. But the quality of the milk, as well as the quantity, is influenced by the milking of the cows and the manner thereof. Dr. Babcock found, in some experiments he tried regarding this matter, that slow milking had a very decided effect in reducing the butter fat in the milk, there being an average decline of over 11 per cent in his trials as a result of slow milking, while there was also a decided diminution in the quantity; though a prolonged trial with cows naturally going dry, the differences tended to disappear. The total result over a season, however, is beneficial to the milk yield in the case of quick milking, not to speak of the saving of time.

HORTICULTURE.

Other Problems of Oregon Prune Growers.

We gave in last week's *RURAL* some lessons which Mr. R. D. Allen of Silverton, Oregon, has drawn from his recent experience and observation. There are a few more considerations sketched by Mr. Allen for the *Portland Farmer* which will enable California producers to understand more clearly the Oregon situation.

Influence of Topography in Oregon.—We have learned by experience that prune trees will not thrive on low, swaggy ground. No orchard will ever amount to anything in such places. All trees on high, rolling ground are doing well, especially if it has a northerly exposure. This is by far the best.

Location has a great deal to do with the ripening of fruit. It might be inferred and is by many supposed that fruit on a southern slope will ripen earlier than that on a northern slope, but this, I think, is erroneous. It will as often be seen that the difference is the other way, if not invariably so. I will relate my own observations on this point. In my neighborhood is a prune orchard on a southern slope with a fall of about 6 feet to the 100. About one mile north of this orchard is another prune orchard of the same variety, on a north slope facing the valley north and west of the town of Silverton, the fruit of which invariably ripens from eight to ten days earlier than in the first orchard.

The same difference is observed in the ripening of grapes in the respective localities. I account for this phenomenon in this way: The prevailing winds in this locality during the summer months are from the north.

The highest ridges in the night time are always warmer than the lower. In the valley north and west of Silverton there is a vast body of warm air, which, being heated during the day, seeks a higher altitude and is carried by the north winds southward, passing near the surface on the north slope near the summit of the first ridge it comes in contact with, it strikes the trees of the latter orchard, and, keeping onward in its course, passes high above the orchard on the south slope, which secures no warmth from this source, but maintains its normal coolness incident to the regular night atmosphere.

Cost of Machine Drying of Prunes.—I have often been asked what it costs to dry prunes. In answer to this I will say that much depends on the season. The past season the cost of drying was nearly double that for the season of 1895. The past season, owing to the severe rains, the fruit in a great many orchards required a great deal of sorting, necessitating frequent handling, all of which adds cost. In my own orchard about half the fruit molded on the trees, and we found it would not do to mix the moldy prunes with the good, so hand-sorting was necessary. A plant for properly handling a prune crop costs money. There are necessary, not alone a good evaporator, but there must be an abundance of shedding in which to work, a system of water works, and a suitable storehouse in which to put the dried fruit, graders, dipping vats, hot water furnace, boxes, etc. A plant to turn out 1500 pounds of dried prunes per day will cost not less than \$1000. With such a plant you should ordinarily be able to dry 35,000 or 40,000 pounds in a season; however, the past season was made short by the bad weather and the capacity of our dryers was cut down about half. In the harvesting of my own crop of 19,000 pounds I paid out for hired help \$113; add to this fifteen cords of wood at \$2; board of hands, \$30, and interest on \$1000 at 10 per cent, \$100, we have a total of \$273, or about 11½ cents per pound. Average price received for the prunes, \$3.70 per cwt.; less \$1.53 per cwt., leaving a net of \$2.21 per cwt. In an ordinary season the cost of drying would have been much less.

Satisfactory Drier Not Yet Secured.—While in the past season much has been learned about driers and drying, the problem of the best method of evaporation is not yet solved. We may yet devise a plan by which the cost of evaporation may be materially reduced.

Very few evaporators the past season were capable of doing the work that was expected of them. A drier with the supposed capacity of 3000 pounds per day would not turn out more than 1500 pounds, though crowded to its utmost.

Very few could turn out the fruit inside of forty-eight hours, when it was expected they could do it in twenty-four hours. Lack of heating capacity was the trouble in a great many instances; yet, with that fully provided for, the prunes, as a rule, dried slowly.

Of our past in this connection, based on my own experience the past season, I am fully confident and that is this: That the system heretofore advocated by many of us, to-wit: that the trays should be so arranged as to compel the air to pass in between them, and not to allow it to pass up through the fruit, is erroneous. I had most of my trays so arranged the past season, and while I kept up a strong

draft between these trays by means of a most excellent system of ventilation, maintaining a temperature of 170° to 180° in the draft, or 150° to 160° on the fruit, I found it utterly impossible to turn out the fruit inside of forty-eight hours. I had a few trays in one part of my drier arranged in the stack system—the plan adopted in what is known as the Fleckenstein drier, with, however, no appliance for operating the stack so as to get out the bottom tray, except by running them in on slides, which necessitated frequent shifting and handling of the trays, and I was able to cure prunes in fine shape in twenty-four hours, or even less, and the prunes were even better than those requiring forty-eight hours.

Vertical Air Currents Preferable.—My explanation of this is that by the former method the dry air passing so rapidly over the fruit causes rapid evaporation of the outer surface of the fruit, thus closing up the pores, preventing rapid evaporation of the inner fruit; whereas by the latter method the air passing up through the upper trays has taken up moisture from below, which renders the evaporation of the outer surface less rapid, yet heaping up and expelling the moisture from within, and as the trays nearest the heat dry first by removing them and placing the next tray near this heat, the moisture of whose fruit has been forced to the surface by the heat to which it has been subjected. This tray is soon dried sufficiently, and is removed and made ready for the next tray, etc. Of course, without some process by which this lower tray can be removed and the next tray brought down in its place, automatically, the system would involve too much labor, and nothing would be gained. A Mr. Cunningham, in the hills a few miles south of Salem, has a drier operated on this plan which, he tells me, is a complete success. I saw his product in the Fruit and Produce Co.'s warehouse at Salem the past season, and it was to my mind the finest product I have seen this year.

I understand that the Fleckenstein drier, which works on this plan, has not given good satisfaction the past season, but I think the fault is in lack of proper heating capacity and that those using them have endeavored to run them with too many trays on a stack. They are built with trays 3 inches deep and stacked up one on top of another, twenty or twenty-four in a section. I think about ten or twelve on top of each other is all that should be used in a single section, and that with proper heating apparatus it would be a success.

There are many devices by which the trays may be effectually and easily operated, and perhaps Mr. Cunningham's, which is not patented, is as good as any. The main thing is a strong circulation of air. Mr. Cunningham secures this by an inflow of about 10 square inches for each bushel of fruit, and a tall ventilating shaft into which a shaft from each section or stack of trays are discharged.

The Robe de Sergeant.

TO THE EDITOR:—All fruit growers in California are trying to raise larger fruit, because the market requires it; and this is especially true of prunes. Six years ago I planted my twenty-acre orchard, and hearing a great deal about Robe de Sergeants, I gathered all the information I could get, and set out about 400 of this variety in a block by themselves. My experience with them is as follows: For the first three years they grow vigorously to wood, with a great tendency to lean over from the wind. The wood is very soft, and the tree should be trimmed back, leaving more of the main wood to start with than with French prunes, because the limbs do not branch out much.

They seem to have a great many enemies. About one tree out of every five is sickly and stunted, covered with a small scale, and the bark looking black and smutty. Borers get in very easily and work deep into the wood; the limbs break off easily at the crotches. Whatever happens to the tree, it keeps alive, but don't grow after once being stunted.

The Robe de Sergeant with me is rather a shy bearer; but the fruit is big, round and very dark. Dries quite sweet when left on the tree till fully ripe. It has to be partly hand picked, which is a great drawback; the fruit does not come off the tree readily by shaking, and gets bruised by falling on the ground. Chickens are very fond of the prunes, and get away with them or spoil them by perforating them.

In curing Robe de Sergeants, they should be treated like French prunes, but dipped a little shorter time, because the skin is very tender.

For jelly making they have no equal.

The above observations are on trees on the Myrobalan root, on a rich and medium rich soil, underlaid by a rather stiff grayish and yellowish clay. I hope other growers will give their observations. I would not recommend the Robe de Sergeant as a very profitable orchard tree.

A. M.
San Jose, Jan. 8th.

[This record of observation is very interesting. Evidently, in some respects, the trees have had a hard time. If protected from scale and borers, they

would have done somewhat better. Who will give further accounts of experience? How do the trees do on other roots and in soil suited to other roots? No doubt many have interesting facts in this line.—Ed.]

The Importing Trade of 1897.

The green fruit season of 1897, says the N. Y. *Fruitman and Guide*, will never be forgotten. Such a disastrous season as the one just closed has never been known in the history of the Italian fruit importing business in America.

There have been innumerable causes attributed for the apparent chronic state of affairs, but the principal ones and those most easily found are the following:

The large importation.

The financial situation in the United States.

The enormous production of domestic green fruits.

These causes and effects found and experimented upon during the season just ended, are such that much material for argument is offered for investigation and study. In the interest of this industry, and for the general welfare of speculators doing business in this line we must not lose sight of that heavenly paradise, California. This prodigious State is now recognized as the fruit center from which carload after carload is dispatched throughout the United States.

THE VINEYARD.

Vine Pruning.

NUMBER I.

By F. T. BIOLETTI, in Bulletin 119 of the Experiment Station of the University of California.

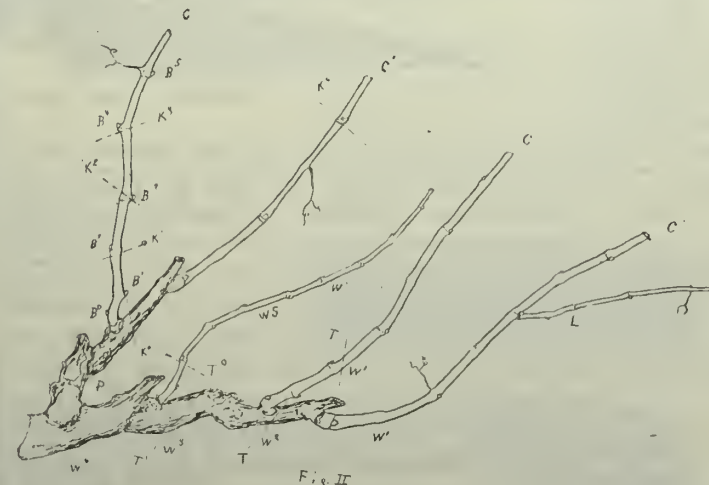
The literature relating to the pruning and training of the vine is already very voluminous, but there seems to be no work which treats the subject in a thorough and convenient way for California vine growers. Publications in English refer generally to methods suited to the Eastern States or to hot house cultivation, while foreign publications, besides being more or less inaccessible, treat the subject so widely that the grower is at a loss what to choose from such a mass of material. It is the purpose of this Bulletin, therefore, to present a brief summary of what in foreign methods seems useful and appli-



TYPICAL VINE SHOWING PRINCIPAL PARTS.

cable to California conditions, together with the results of experiments on the University of California vine plots, and of observations made in numerous vineyards in various regions of the State.

Almost every vine growing district has its pecu-

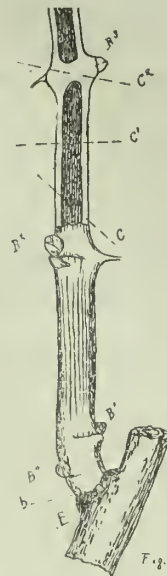


ARM OF VINE SHOWING DIFFERENT GROWTHS.

liar systems of training, ranging from the non-training usual in parts of Italy, where the vine spreads almost at will over trees planted for the purpose, to the acme of mutilation practiced in many

localities where the vine is reduced to a mere stump, barely rising above the surface of the ground. These various systems will not be discussed here, but only those which experience has shown to be most adapted to California conditions.

No account, however detailed, of any system can replace the intelligence of the cultivator. For this reason the general principles of plant physiology which underlie all proper pruning and training are discussed in connection with the several systems



RIGHT AND WRONG CUTS IN PRUNING.

described. This should aid the grower in choosing that system most suited to the conditions of his vineyard, and to modify it to suit special conditions and seasons. All the operations of pruning, tying, staking, etc., to which a cultivated vine owes its form, are conveniently considered together.

No cultivated plant is susceptible of such a variety of modes of training as the vine, and none can withstand such an amount of abuse in this matter and radical interference with its natural mode of growth. On the other hand, no plant, perhaps, is so sensitive to proper treatment, or responds so readily to a rational mode of pruning and training.

Objects of Pruning.—The objects of pruning are (a) to facilitate cultivation and gathering, (b) to increase the average yield, and (c) to improve the quality of fruit. The vine must not be trained so high that

the grapes are difficult to gather, nor allowed to spread its arms so wide that the cultivation of the ground is unduly interfered with. Vines untouched by the pruner's knife bear irregularly, a year of over-bearing being followed by several of under-bearing as a consequence of exhaustion caused by a too severe drain on the reserve forces of the plant. The grapes on untrained or improperly trained vines are exposed to different conditions of heat and light, and consequently develop and ripen unevenly.

Physiological Principles.—The main facts regarding the physiology of the vine to be kept in mind in this connection are:

1. The vine feeds by means of the green coloring matter (chlorophyll) of its leaves. It obtains the sugar, starch, etc., which it needs from the carbonic acid of the air, which is converted into these substances by the chlorophyll under the influence of light. A certain amount of green leaf surface functioning for a certain time is necessary to produce sufficient nourishment for the vital needs of the vine and for the production of a crop. Those leaves most exposed to the direct rays of the sun are most active in absorbing food. The youngest leaves take all their nourishment from the older parts of the plant; somewhat older leaves use up more nutrient material in growing than they absorb from the air. A young shoot may thus be looked upon as, in a sense, parasitic upon the rest of the vine. The true feeders of the vine and of its crop are the mature, dark-green leaves.

2. Within certain limits the fruitfulness of a vine or of a part of a vine is inversely proportional to its vegetative vigor. Methods which tend to increase the vegetative vigor of a vine or of a part of a vine tend to diminish its bearing qualities, while, on the contrary, anything which diminishes vegetative vigor tends to increase fruitfulness. Failure to reckon with this fact and to maintain a proper mean between the two extremes leads, on the one hand, to comparative sterility, and, on the

other, to overbearing and premature exhaustion.

3. The vine tends to force out terminal buds and to expend most of its energy on the shoots farthest from the trunk. To keep the vine within practical limits, this tendency must be controlled by the removal of the terminal buds, or by measures which check the flow of sap and force the growth of buds nearer the stock.

4. The nearer a shoot approaches the vertical the more vigorous it will be.

5. The size of shoots and of fruit is, within certain limits, inversely as their amount. That is, with a given vine, or arm of a vine, the fewer shoots allowed to grow the larger each will be, and the same is true of bunches of fruit.

6. Other conditions being equal, an excess of foliage is accompanied by a small amount of fruit; an excess of fruit by diminished foliage.

7. Shoots coming from one-year-old wood growing out of two-year-old wood are alone to be depended on for fruit. Other shoots are usually sterile.

8. Bending, twisting or otherwise injuring the tissues of the vine or its branches tends to diminish its vegetative vigor, and therefore, unless excessive, to increase its fertility.

A description of a typical vine, giving the names of the principal parts, will make clear the accounts of methods to be given later. Fig. 1 represents a vine of no particular order of pruning, showing the various parts. The main body of the vine (T) is called the trunk or stem; the principal divisions (B) branches; the smaller divisions (A) arms, and the ultimate ramifications (C) shoots when green, and canes when mature. A shoot growing out of the vine above ground on any part older than one year (WS) is called a water sprout. Shoots coming from any part of the vine below ground (S) are called suckers. When a cane is cut back to 1, 2, 3 or 4 eyes it is called a spur (R).

When a shoot or cane of one season sends out a secondary shoot of the same season, the latter (L) is called a lateral.

Fig. 2 represents an arm of a vine as it appears in winter after the leaves have fallen. The canes (W1) are the matured shoots of the previous spring. W2, W3, W4 represent 2, 3, and 4-year old wood, respectively. Near the base of each cane is a basal bud or eye (B^o). In counting the number of eyes on a spur the basal eye is not included. A cane cut at K1, for instance, leaves a spur of one eye, at K2 a spur of two eyes, and so on. When more than four eyes are left the piece is generally called a fruiting cane (Fig. 1, F). The canes (C, C1) coming from two-year-old wood (W2) possess fruit buds; that is, they are capable of producing fruit-bearing shoots. Water sprouts (WS) and suckers (S) do not ordinarily produce fruit-bearing shoots. Below the basal bud each cane has one or more dormant buds (b Fig. 3) which do not grow unless the number of eyes left by pruning or frost is insufficient to relieve the excess of sap pressure. These buds produce sterile shoots. Each eye on a cane has, at its base, two dormant buds. One of these sometimes grows out the year it is formed, making a lateral (L, Figs. 1, 2). These laterals may send out secondary laterals (SL, Fig. 1). It is on the laterals and secondary laterals that the so-called second and third crops are borne.

Pruning for Wood and for Fruit.—One of the chief aims of pruning is to maintain a just equilibrium between vegetative vigor and fertility. We must, then, prune for both wood and fruit. A vine which has become enfeebled by over-bearing should be pruned for wood. By this is meant that only a small number of buds should be left. As all the energies of the vine have to be expended on a small number of shoots, these shoots grow with more than ordinary vigor. Under these conditions the vine bears little; first, because the eyes near the bases of the canes, which are the only ones left in very short pruning, are naturally less fruitful than those farther removed from the main body of the vine; and, second, because an exceptionally vigorous shoot is generally sterile. The vine is thus strengthened, and, as the stores of nutriment provided by a vigorous vegetation are not drawn upon by a heavy crop, the increased vigor of the vine is more marked the second year. The second year, therefore, more wood may be left and the crop increased without detriment to the vine.

On the other hand, a vine which "goes to wood" must be pruned for fruit. For this purpose we increase the number of buds left and choose the most fruitful wood. The largest canes are the least fruitful, while the smallest have not the necessary vigor to support a large crop. The best cane to leave for fruit, then, is one of medium size, with well-formed eyes.

Proper Method of Making Cuts.—It is by no means a matter of indifference just where the cut is made in removing a cane or arm. This will be made clearer by referring to Fig. 3. The upper part of the spur is represented as split in two longitudinally in order to show the internal structure of the cane. It will be noted that at each bud there is a slight swelling of the cane. This is called a node, and the space between an internode. The internodes are filled with soft pith, but at each node there is a growth of hard wood extending through the cane.

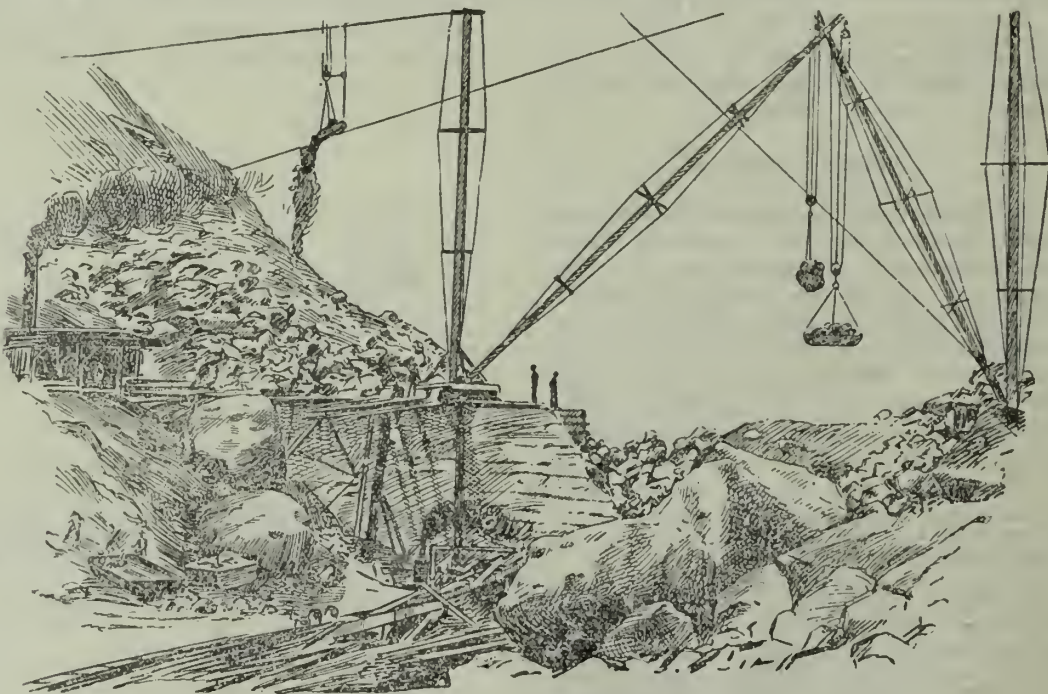
Now, if the cane be cut off at C1, in the middle of an internode, the pith will shrink away and leave a little hollow in which the rain collects. This is an excellent breeding place for fungi and bacteria, which cause rotting of the pith and frequently kill the bud. If, on the contrary, the cane be cut at C2, through a node, a protecting cover of hard wood is left, which is an effectual barrier against decay organisms. If a spur projects too far from the vine and it is desirable to make it as short as possible in order not to interfere with cultivation, it should be cut at C and the cut made as nearly vertical as possible. This allows the water to run off, and leaves less pith to foster the growth of the fungi.

At the base of the cane there is a slight enlargement (E). In removing a cane completely the cut should be made just above this enlargement. This is the most favorable place for healing, as it makes the smallest possible wound and does not leave a projecting stump of dead wood to prevent the healing tissues from closing over the wound. In removing a piece of older wood, as at K^o and T1, Fig. 2, it is advisable not to cut too close for fear of injuring the spur by the drying out of the wood. The projecting pieces of dead wood left in this way should be carefully removed the next year in order to allow the wound to heal over. The large cuts which are thus occasionally necessary are most easily performed by means of a well-made and well-sharpened pair of two-hand pruning shears. These shears are often to be preferred to the ordinary one-hand shears because they render the cutting through the nodes easier and do away almost entirely with the necessity of a saw. Of course, a careless workman may split and injure vines seriously by using long-handled shears clumsily, but the bending of arms to facilitate cutting with the one-hand shears often results in the same evil. The one-hand shears, however, are more convenient when many long fruiting canes are left, as the necessary trimming off of tendrils and laterals is more easily performed with them.

THE IRRIGATOR.

Irrigation in Southern California.

Last year was a notable one in the development of water in the extreme southern part of the State. During '97 the great water system of the Southern California Mountain Water Co. was greatly devel-



MORENO DAM, SAN DIEGO COUNTY, CAL.

oped. The system comprises four immense reservoirs, known as the Morena, Upper and Lower Otay and Barrett's. During the year the Lower Otay reservoir was completed. The reservoir dam is 130 feet high and will impound 42,000 acre-feet of water. The Upper Otay is a storage, and not a catchment, reservoir, and at 120-foot contour will impound 1059 inches. So far, only the foundation of this structure has been laid. The Morena dam, of which an engraving is here given, has been constructed to a height of almost 100 feet, but another 50 feet must be added before the structure is complete. At 150 feet this reservoir will impound 3219 inches of water. These works, when completed, will represent an investment of at least \$3,000,000, and will command thousands of acres of productive land in southern California.

A New Scheme in Irrigating.

It may be true that there is nothing new under the sun. If it is, then, according to W. M. Bristol in the Los Angeles Cultivator, John Yarnell, a High-

land orange grower, has not made an original discovery, but has simply resurrected a pre-historic practice. So far as Mr. Yarnell is concerned, however, it is original, and as in use elsewhere it is a dual discovery.

The principal supply of irrigating water in Highland is delivered on the 15-day plan, each irrigator's run repeating itself at regular intervals throughout the season. Formerly fifteen days was thought to be a long time between drinks for an orchard; but ideas change, and it is now commonly believed that a thorough irrigation once a month is not only better for the trees, but entails less labor upon the orchardist. Consequently the practice of watering one-half of the orchard with each alternate 15-day run has become quite general.

It was this method that led to Mr. Yarnell's discovery. His orchard contained an odd number of rows, the central row being analogous, as it were, to Mason and Dixon's line. When the north half of the orchard drank it was Yank, and when the south took water it was Reb. Mr. Yarnell frankly admits that a whole year passed before he was able to say whether it was irrigated once in fifteen days or once in thirty days, for it was watered on alternate sides on every 15-day run. While meditating upon this perplexing problem he noticed that that particular row looked remarkably well—that it had outgrown the others and did not show signs of thirst during the last days of waiting, as did those receiving water on both sides once in thirty days. Being a man who does his own thinking, he began analyzing the water, and his conclusions ran somewhat as follows: "Where all the soil tributary to a tree is saturated with moisture all the plant food therein contained is placed at the disposal of the tree, and the tree, supposing that the feast will be continuous, falls to like a lad at a picnic. A vigorous growth begins, and the consequent draft on the soil moisture forces the tree to suspend and perhaps to display the distress signal before the next irrigation. It follows, therefore, that this row, having had its rations more rationally supplied, has experienced no famine and has plodded along like the tortoise, to the first place in the race."

Acting upon this philosophy Mr. Yarnell is this year irrigating alternate spaces (not alternate rows) in his orchard every fifteen days, thus giving water to alternate sides of each row on each run, the application being made, of course, by the furrow system. There may, perhaps, be some minor objections to this innovation, such as the necessity in cross cul-

tivation, of going over the entire tract each time. There is little danger, however, of over-tillage, and the arguments in its favor should at least entitle it to a season's trial.

THE POULTRY YARD.

Tapeworms and Turkeys.

Tapeworms, as well as the infectious liver disease termed blackhead, kill many young turkeys at the East, according to Samuel Cushman. When dissecting turkeys (sick ones selected from many different flocks) with Dr. Smith, of the Bureau of Animal Industry, for evidences of blackhead disease, they were very particular to examine the intestines of each for tapeworms, and found more were infested than we had even suspected. Of the sixty-five sick turkeys showing no traces of the liver disease, forty had tapeworms in their intestines. These worms were from a quarter of an inch to several inches in length. Occasionally those a foot or more long were

found. In some specimens great numbers of very minute worms lined the upper intestine; others contained only large, fully developed worms in the lower intestine. One bird from a flock, the turkeys of which had been dying for over a month and from which thirty had been lost within a week, was badly infested, and no other cause for sickness could be discovered. One little turkey three or four weeks old from another flock had many small worms in the duodenum, while the lower intestine was almost completely filled with a tangled bunch of worms, about fifty in number, several inches in length.

This trouble is very prevalent in some flocks during the spring and summer at the East, and especially in July and August among turkeys on land which has been overstocked with them for several years. Evidently the younger the turkeys receive the parasites the more they suffer. The worms probably irritate the bowels, cause digestive derangement, diarrhea, weakness and death. A few worms may do a little harm, while a great number may be fatal. Doubtless if they survive until the embryos have developed and have mostly passed, they may recover. At certain seasons segments of these worms may be found early in the morning under the roosts among the droppings of the infested turkeys.

Tapeworms cause more loss among Western sheep, it is said, than any other disease. As their name implies, they are flat worms. They have a head and many joints, or segments. They have no mouth, their nourishment—the digested contents of the intestines of their host—being received by absorption. The head attaches itself to the lining of the intestines by its suckers, or by curved, claw-like hooks. The segments are gradually formed next to the head and are pushed back by the formation of new ones, and finally reach a position at the opposite extremity, or tail, when they mature, separate and pass away. When mature each segment is full of embryo tapeworms. These embryos, those of most species, are taken up by some animal, within which they pass the intermediate stage of development and then pass to their final host. Dr. Salmon thinks it

will be found that earthworms, insects or snails are the intermediate host of these tapeworm embryos; that they probably are not able to develop without an intermediate host.

The longer tapeworm-infected turkeys have been kept on a place and the greater the number annually grown the more thoroughly will tapeworm eggs be sown upon the land. If you can keep the breeding turkeys free from the worms you may prevent them from sowing the seeds of the tapeworm crop. Dosing them in winter and spring to free them would be an important preventive measure. They should be confined to an inclosure while being treated and the ground and their droppings frequently disinfected to destroy the eggs that pass off. The little turkeys should be raised on land that turkeys or chickens have not run on for years, as well as given an occasional dose that will kill worms. Possibly wild birds and animals may infest such ground with the same embryos. Freshly powdered kousso is recommended as one of the best worm medicines for human beings. The dose for a child of six years is one-fourth ounce, given in the morning on an empty stomach. A previous evacuation of the bowels is recommended, as well as a brisk cathartic, should the medicine not act on the bowels within three or four hours. One dose is usually sufficient to destroy the worms. Kousso poisons the worms but not the patient. Male fern is also efficient but an overdose poisons the patient. Tansy, powdered areca nut and ground pumpkin seed are also used as remedies. Asafoetida and turpentine are recommended. Turkey growers should cautiously test the remedy to learn the proper dose for little turkeys. We have not done that.

Chickens on a Mixed Farm.

That there are localities peculiarly adapted to the poultry business cannot be questioned, and Kings county, says the *Hanford Journal*, is one of these localities. The amount of eggs and poultry shipped out of Kings county annually is surprising, and this

output is increasing yearly, as our farmers are realizing the steady and reliable income from poultry raising, and are improving the breed of their fowls, and taking more care of the birds that really lay them golden eggs, as did the fabled bird of old.

From C. F. Fuller, whose farm is near Cross creek, five and one-half miles east and a little south of Hanford, we have obtained a statement of the profits he realized last year from 175 hens, from Jan. 1, 1897, to Jan. 1, 1898. He kept a daily record of the eggs gathered and the money received for the same, and the result is as follows:

| | |
|--|-----------|
| 1697½ dozen eggs, net returns..... | \$235 82½ |
| Express charges on above to San Francisco..... | 39 55 |
| Commission..... | 14 00 |
| Gross sum realized from eggs..... | \$289 37½ |
| Chickens sold, net..... | \$113 39 |
| Eggs sold, net..... | 235 82½ |
| Total returns, net..... | \$349 21½ |
| Total amount realized per hen, net..... | 2 00 |

The above is the financial result of the eggs sold. All the eggs needed for the family larder were used and no account kept of them.

Mr. Fuller began on Jan. 1, 1897, with 175 good hens. On Jan. 1, 1898, he began, with 175 of the best selected hens from his band, another year of profitable poultry raising.

His poultry are half and quarter breed Leghorns. He attributes his success in securing such good financial results, not only to excellent climatic conditions, but to good care. Only part of his time, however, is devoted to poultry raising, as he has a forty-acre farm on which he raises pigs for market, his own garden truck, also hay, etc., which affords him quite an income aside from his poultry. But he finds plenty of time from his other farm work to give his poultry good care. They are kept constantly supplied with pure, fresh water and gravel. He feeds plenty of Egyptian corn, in the head, raising the corn on his own place. Feeding corn in the head makes the chickens "scratch for a living," and thus earn their daily bread in another way than "laying for it."

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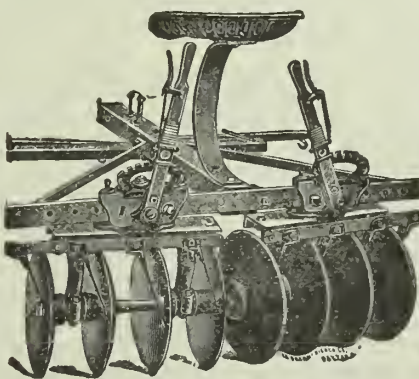
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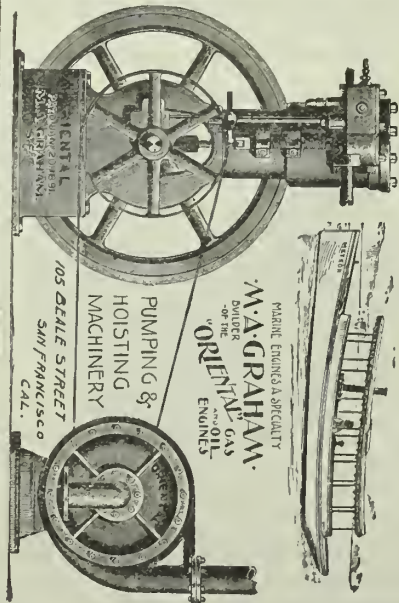
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THE HOME CIRCLE.

A Little Boy's Lament.

I'm going back down to grandpa's,
I won't come back no more
To hear the remarks about my feet
A-muddyin' up the floor.
They's too much said about my clothes,
The scoldin's never done;
I'm goin' back down to grandpa's,
Where a boy kin hev some fun.

I dug up half his garden
A-gittin' worms for bait;
He said he used to like it
When I laid abed so late;
He said that pie was good fer boys,
And candy made 'em grow;
Ef I can't go to grandpa's,
I'll turn pirate first, you know.

He let me take his shotgun,
An' loaded it for me;
The cats they hid out in the barn,
The hens flew up a tree.
I had a circus in the yard
With twenty other boys—
I'm going back to grandpa's,
Where they ain't afraid of noise.

He didn't make me comb my hair
But once or twice a week;
He wasn't watchin' out fer words
I didn't orter speak.
He told me stories 'bout the war
And Injuns shot out West;
Oh, I'm goin' down to grandpa's,
Fer he knows wot boys like best.

He even run a race with me,
But had to stop an' cough;
He rode my bicycle and laughed
Bec'us he tumbled off.
He knew the early apple trees
Around within a mile;
Oh, grandpa was a dandy,
An' was "in it" all the while.

I bet you grandpa's lonesome,
I don't care what you say;
I seen him kinder cryin'
When you took me away.
When you talk to me of heaven,
Where all the good folks go,
I guess I'll go to grandpa's
An' we'll have good times, I know.

—A. T. Worden.

The Rose of Cuba.

A thick fog isolated all beneath its folds. From the shore Meg could not even discern the lighthouse fifty yards behind her. The peculiar carrying properties of a fog brought to her ear sounds from the mainland, and the bell buoy on the far-off Graves seemed ringing at her side. The tolling of bells on vessels at anchor in the Roads and whistles from cautiously moving steamers created an almost ghostly sense of companionship. The fog siren at the light was sending forth regularly its ponderous, vibrating shaft of sound which the fog mocked—beating it back and bringing it to the ears of those on shipboard from an entirely different quarter. Meg found exhilaration in the fog. The wet air brought a rich color to her cheeks and coaxed out little curling locks of hair.

Suddenly their glided out from the fog a row-boat rigged to carry a small spirit-sail, which now hung empty of wind while the boat went forward under short, quick oar strokes. Meg shouted and the rower turned his head:—

"Hello, Meg! I was goin' on to the boat-house, but I'll come ashore here." He brought the boat's bow round and ran her up on the pebbly beach.

"I've got the 'Rose of Cuba' lyin' out there in the Roads, waiting for the fog to lift and go up to the city. We could have gone up last night, but the wind flatted out at sunset an' along towards mornin' this fog come up."

"Don't you pull, Meg; she's too heavy for you to handle."

He took a roll of old sail from the stern and led the way toward the boat-house.

"I come ashore to leave this, an' to see if you or your father wanted anything up in town."

At the land end of the wharf—a stone one built by government in connection with the lighthouse—was the boat-house. Here Meg followed him and sat watching while from under a pile of rope in one corner he drew a sea chest, unlocked it and put in his boulder.

"Why, Nick, I never knew you had that chest here."

"It's your father's; he said I might use it."

"Well, but why do you keep it locked?—what's in it? What's the

good of that old sail cloth you've just put in?"

"What'll you give to know?" he said teasingly, locking the chest and coming to stand before her.

Yet Meg was surprised to see that despite his laugh and bantering air, his face grew sober. A sudden fear had crossed his mind.

"Meg!" he put his hands on her shoulder and looked intently down into her face.

"Meg, do you love me?"

"You know that I do," she answered simply.

"Yes, I do—but will you always love me—will nothin' ever make you turn against me?"

"Why don't you ask if I'll always go on breathin', Nick? Breathin' an' lovin' will go away together—no, lovin' won't go even then, please God."

Her earnestness satisfied him. Sitting down beside her he folded his arms around her and laid his face against her shoulder.

"I was wantin' to hear you say so, Meg. That was all."

Had Meg been of a questioning temperament she would have puzzled over this mood of Nick's, for the thousand sweet torments that commonly beset lovers had never assailed these two who had grown up from childhood to love and trust one another. But it was not her nature to look for trouble, it was enough for her that Nick seemed in need of a little loving soothing which she well knew how to give.

"The pennies are pilin' up, Meg," he said a little later, "and the cottage over on the Point begins to look like home to me already."

Meg nestled her hand in his for answer, and looked up at him with the lovelight shining deep in her eyes. At that moment her father passing the head of the wharf and catching the sight of Nick, came down to them. His beard was glistening with the wet, and his rubber boots clumped heavily on the planks.

"Well, lad! so you've got the 'Rose of Cuba' again. You've piloted her a good deal lately, Nick."

"Yes, I guess I have, cap'n. Is the fog liftin' any?"

Gleams of pale sunlight were beginning to struggle through the fog, and fell fainting across the island. The three strolled along the shore to Nick's boat, watching as they went the battle between sun and fog.

Over in the west appeared patches of blue which spread gradually over the entire sky, and pressed the fog lower and lower on the sea till swirling in disordered shreds, it at last owned itself conquered and vanished gracefully into the ranks of the enemy. The sea lay disclosed, smiling its gentle blue eye, and over in the Roads swung half a dozen schooners and a brig at anchor, their sails shaken out to dry.

"Well, Cap'n. I'll do your errands, and if the wind holds I'll be down again by night."

He kissed Meg, set his small sail, and as the freshening wind blew him lightly away from the shore, turned and waved his cap to them.

"He's a right sort of lad," her father said, watching him. "Sound and clean to the quick."

Meg thrilled at the words. They were true in the main, though there was more than a dash of lawlessness in Nick which the good captain did not reckon. His daughter, with the sympathetic understanding of youth, was nearer to guessing it. Over on the mainland, where he belonged, people told tales of a piratical ancestor who, two or three generations ago, used to set false lights on the outer islands to lure vessels to destruction. It was a drop of this wild blood which set ablaze in Nick's black eyes the fire that she had more than once seen there.

Two days after this the captain and Meg went over to the village on the mainland. It was a glorious morning, the day had dawned clear after a night's rain, and the wind was blowing strong from the northwest. Sky and sea had a clean, wind-swept look.

They had made an early start and at a little after 10 o'clock worked out through the narrows on the return

trip. The Margaret started with a will on a long windward reach, every now and then putting her nose through the top of a wave and sending the spray over into the standing room.

"Herc, Meg, steer awhile, an' let your old father lie back an' watch you holdin' her up to the wind."

He braced himself in the companion way and let his eyes rest on her with a look of fond pride. He loved to see the picture his girl made, swaying with each dip of the boat. And how Meg loved the pull of the tiller in her hand! It made her feel that it was a living creature bounding beneath her.

"Meg, look an' see if that's the revenue cutter comin' down through the upper narrows. I wonder what she's after. She'll get a good tossin'-up if she comes down outside the light, for there's a heavy sea running." Last night's storm was sending in a long swell from outside, and where wind and tide met there were whitecaps. The white tower of the light and the white house nestling at its base stood out brightly against the surrounding blue. Meg brought the sloop round on the home reach and steered for the island.

"See the gulls following us, father. One for anger, two for mirth, three for a weddin' and four for trouble. Oh, no, I won't believe that. Besides, that's only what we say for crows, not for gulls—my beautiful sea gull."

Despite herself the bad omen sent a shiver through her. It is always when we are most happy that we fear trouble most.

They rounded up at the moorings, left everything snug on board and went ashore in the dory. The warm, bright kitchen seemed a very comfortable place after the long sail in the face of the wind, and the captain mixed a nip of toddy "to prevent a chill, Meg."

"But I'm not cold, father—you'll have to drink it all yourself, you dear old toper. And now I'm goin' to find Nick; he's somewhere round the island, an' I want to tell him somethin'."

Ah, wasn't it good to be alive on such a day as this! She reveled in the cold rush of the wind against her face, and for very lightness of heart bounded as she ran. The west side of the island was rockbound, but at one place its line was broken by a pointed inlet, as if some kindly Titan with mighty hammer had broken apart the rocks to make an entrance for little man and his boats. It was on this small bit of beach, up where the gully penetrated for some distance into the cliff, that Nick kept a few lobster-pots which he set and hauled at odd moments. And it was here, overhauling his lines and buoys, that she found him.

Lobstering is a hard life for those who live by it. It means going out in all kinds of weather to haul the pots, and hauling is wet work. It means scanty catches of late years; since so

many have been taken out of the waters it means solid work a good part of the winter mending cars and gearing. Worst of all, it means many a father of a family gone overboard, his dory drifting ashore empty the next tide. It was something of this that was passing through Meg's mind and made her say:

"It's bad enough to have you off pilotin', Nick, but I'd rather you'd do that than go lobsterin' for a livin'."

"Are you goin' to worry about me, Meg darlin', like mother did for father? I'd rather quit the sea for good an' all than see your sweet eyes grow small with strainin' through a spyglass after my sail comin' in."

She laid her cheek, freshly cold with the wind, against his, to make up by caress the tenderness she did not put in words.

"My eyes can stand it if the spyglass can."

"That was always your way, Meg—a grand good way, too—a laugh for the hard things an' let the pleasant things bring the laugh themselves!"

"Why, Nick!" she exclaimed, suddenly, having stepped to a point where she could see over the sides of the gully. "There's the revenue cutter makin' in for the island!"

Nick sprang to his feet with a suddenness that crashed in the lobster pot on which he had been working.

"What's the matter, Nick? She don't need a pilot. What's the matter?" for his face was white to the lips and the expression of the eyes so changed that she was frightened.

"The cutter," he said, as if to himself, "the revenue cutter—and they'll search—" He started as if to climb the cliff, but drew back. "It's no use—they'd see me."

Meg caught hold of his arm in amazed distress.

"Nick, for pity's sake, tell me what you mean! What's wrong with you?"

He tried to answer, but broke down miserably, and turned his eyes away from her troubled gaze.

"I can't tell you, Meg; I can't get the words out."

In a flash she understood, and with the understanding came the rapid instinct to know what she must do. A stern and determined look transforming her face; she held out her hand.

"Give me the key of the chest. An' you stay here—if they see you they'll ask you questions—an' you can't tell a lie."

The only reproach she ever gave him was that her last words implied. As he drew out the key she broke it from the string by which it hung around his neck, and fled up the side of the gully, a nervous strength lifting and guiding her over the rocks at a pace she could never have accomplished at another time. As she gained the slope of the

(Continued on page 63.)

A FRIEND'S ADVICE.

And what it led to.

It is not a common occurrence that a friendly word should be the means of giving nearly forty years of happiness and health to the person heeding the advice it carried. This was the case with Mary Lingard. At twenty-five she was dragging out her days in misery. At sixty-one she finds herself so active and strong she can do work that would shame many a younger woman, and looks back on thirty-six happy, healthful years of industry. But let her tell her story:

"Thirty-six years ago I had great trouble with my liver. The doctors allowed that there were tumors growing on it, and they blistered my side in an effort to give me relief. I was at that time earning my living as a tailoress, but for five years, between the pain in my side and the blisters I was in constant misery, and work was a drag to me, with no prospect of relief; fortunately for me, however, a friend advised me to take Dr. Ayer's Sarsaparilla, and finally persuaded me to take a regular course of it. When I first commenced taking the Sarsaparilla my side was so painful that I could not fasten my dress, and for a time I did not get any relief, but my friend advised me to persevere and relief was sure to come, and come it did. This happened. As I say, thirty-six years ago. My liver has never troubled me since, and during these years I have passed through the most critical period of a woman's life without any particular trouble, and to-day, at sixty-one years of age, I am active and strong, and able to do a day's work that would upset

many a younger woman. Ever since my recovery I have taken a couple of bottles of Dr. Ayer's Sarsaparilla each spring, and am quite satisfied that I owe my good health to this treatment. I give this testimonial purely in the hope that it may meet the eye of some poor sufferer."

—MARY LINGARD, Woodstock, Ont.

Dr. Ayer's Sarsaparilla has won its way to every corner of the world by the praise of its friends; those who have tried it and who know they were cured by the use of the remedy. There is nothing so strong as this personal testimony. It throws all theories and fancies to the winds and stands solidly upon the rock of experience, challenging every skeptic with a positive "I know." Ayer's Sarsaparilla with its purifying and vitalizing action on the blood is a radical remedy for every form of disease that begins in tainted or impure blood. Hence tumors, sores, ulcers, boils, eruptions and similar diseases yield promptly to this medicine. Some cases are more stubborn than others, but persistence with Dr. Ayer's Sarsaparilla usually results in a complete cure. Mary Lingard began with a bottle, and went on to a course of Dr. Ayer's Sarsaparilla. When she was cured she realized that a medicine that could cure disease could also prevent it. So she took a couple of bottles each spring and kept in perfect health. There are thousands of similar cases on record. Some of these are gathered into Dr. Ayer's Curebook, a little book of 100 pages which is sent free by the J. C. Ayer Co., Lowell, Mass. Write for it.

Fashion Notes.

White suede cloth is worn for dressy gowns, and is trimmed elaborately with white braid and gold buckles, besides having a vest, revers or yoke collar of white satin covered with cream lace.

One of the prettiest gowns of the castor shade for the street has at the opening of the Russian blouse in the front a narrow line of burnt orange velvet, upon which is a single narrow strip of sable fur, while another edges the plain standing collar of the gown material.

Cloth and corded silk and drap d'ete, or double-faced cashmere with moire, will be very fashionably combined next season.

The small pad bustle is now worn with the latest day costumes and evening toilettes; and those of larger proportions are announced.

The costumes and toilettes made for theatre and visiting wear are exceedingly smart and rich, although not always elaborate in make. Russian velours costume cloth, repped silks or wools, drap d'ete, and beautiful silk and wool mixtures are the favored materials, and heavy guipure laces, forming picturesque quimpes, yokes and blouse fronts also. Fur, silk appliques and braiding are the chosen garniture for these gowns.

Bandana stocks are attractive if they worn by the proper persons. The peculiar orange-red shade or red and orange cannot be worn next the face by every one.

Odd waists of silk to wear with the cloth or satin skirt are quite as much the fashion as ever. With women of moderate means these take the place of a dinner or an evening gown. Given one smartly cut skirt and two or three dainty bodices and an effect of as many different costumes is secured at comparatively little outlay.

Cloth costumes are more and more to the fore as the season advances. Colors and styles are artistic, rich and effective. Soft fabrics, delicate tints and an absence of stiffness are noticeable in the latest designs.

Some of the winter shades in violet, heliotrope and purple are so lovely and tempting that very many women have chosen them, both in cloth and silk, for sake of their attractive beauty alone, allowing their admiration to get the better of their taste. They must know full well that these colors are often about the worst and most trying they could select in point of suitability.

A recent wedding was responsible for one of the most magnificent day toilettes that this season has seen, and this included a novel use of chenille trimming. Velvet was the material of the gown, in that new shade of purple known as Ophelia, and a slightly darker shade was used in the trimming. In this case the chenille was woven into a net and edged with chenille fringe. This was arranged as a shawl drape on one side of the bodice and on the skirt to form a yoke that hung down the front in a pointed apron to the hem. The skirt had a slight train, of course, arranged in a fan of plaits, but no other trimming. On the side of the bodice that the chenille did not cover was arranged a fall of yellow lace. The bonnet was a net of purple chenille, over a gold crown, and was worn with narrow velvet strings.

Historical.

The earliest collection of Christmas carols was published in 1521. Many are little more than drinking songs used at social or religious festivities, of which singing and dancing then formed a prominent feature.

In the reign of Edward III., there were at Bristol, England, three brothers who were eminent clothiers and woolen weavers, and whose family name was Blanket. They were the first persons who manufactured that comfortable material which has ever since been called by their name, and which was then used for peasants' clothing.

In olden times the plum porridge

was partaken of at the beginning of the dinner, occupying the soup course; and the mince, or shred, pies were very popular. In shape they are often slightly oval, as well as round; and our grandmothers tell us this oval shape was to resemble and remind us of Christ's cradle. In England it is still a very popular and enjoyable custom to offer a mince pie to every caller.

Gems of Thought.

The noblest motive is the public good.—Virgil.

He hath riches sufficient who hath enough to be charitable.—Sir Thomas Browne.

Beautiful is young enthusiasm; keep it to the end, and be more and more correct in fixing on the object of it.—Thomas Carlyle.

Despair is the thought of the unattainableness of any good. It works differently in men's minds, sometimes producing uneasiness or pain, sometimes rest and indolence.—Locke.

You must try to be good and amiable to everybody, and do not think that Christianity consists in a melancholy and morose life.—Jean Baptiste Henri Lacordaire.

The loftiest souls are those who are conscious of the universal symphony, and who give their full and willing collaboration to this vast and complicated concert which we call civilization.—Amiel's Journal.

Education and instruction are the means, the one by use, the other by precept, to make our natural faculties of reason both the better and the sooner to judge rightly between truth and error, good and evil.—Dr. Hooker.

DOMESTIC ECONOMY.

Domestic Hints.

PUMPKIN PUDDING.—Prepare some pumpkin for pies and rub through a colander; to one pint add an equal quantity of thick, tart apple sauce. To this add one pint of rolled crackers or fine stale bread crumbs, one pint of sweet milk, two tablespoonfuls of flour, one teaspoonful of salt and sufficient sugar to sweeten. Pour into a buttered baking dish, grate a little nutmeg over the top and bake in a moderate oven for one hour.

ENGLISH PLUM PUDDING.—For English plum pudding clean, wash and dry one pound of currants, stone one pound of raisins. Mix the currants, raisins, one pound of suet chopped fine, three-quarters of a pound of stale bread crumbs, a quarter of a pound of brown sugar, the grated rind of one lemon, half a pound of minced candied orange peel, a quarter of a pound of flour, half

of a grated nutmeg. Beat five eggs; add to them half a pint of orange juice, then pour over the dry ingredients and mix thoroughly. Pack into greased small kettles or molds. This will make about six pounds. Boil for ten hours. Serve with hard sauce.

STEAMED INDIAN PUDDING.—One quarter of a pound of beef suet, one pint of milk, half a cupful of molasses, one pint of Indian meal, one piece of stick cinnamon, one-third of a cupful of currants, three eggs. Part of the work of making this pudding is done before the day it is used. Chop the suet fine and mix with it the cornmeal; place the milk with the stick of cinnamon on the fire in a double boiler, and when hot stir in the suet and meal; when smooth, take from the pan, remove the spice and the molasses and currants; beat well and stand over night. In the morning add the eggs, well beaten; turn the whole into a well-greased tin basin, set in a steamer, covering the latter lightly, and steam four hours over boiling water; serve hot with this sauce.

Hints to Housekeepers.

Old stains should be first soaked in cold water, then use boiling.

Cold boiled potatoes may be made into potatoes au Gratin or creamed potatoes.

A tablespoonful of stewed tomatoes left from dinner may be saved and added to the roasted beef gravy of to-morrow.

The water in which vegetables have been boiled, with the exception of potatoes, is too valuable to be wasted. Save it as a basis for the vegetable soups.

Mud stains can easily be removed from silk by rubbing with a piece of flannel. If the stain proves obdurate rub with a piece of linen saturated with alcohol.

Fresh stains can usually be removed from linen by boiling water. Place the stain over a large bowl, and pour through it boiling water from the teakettle, held at a height to insure force.

One of the most convenient things for washing the inside of lamp chimneys is a piece of sheepskin with the wool on, tacked around the end of a stick of convenient length. This is easy to keep clean, and will dry quickly.

A little whiting dissolved in the boiling water in which the silver is cleaned daily will remove all grease and dullness, and make the weekly polishing almost unnecessary. They should be well dried and rubbed afterwards.

When rank vegetables, cabbage, onions, etc., or fish, have been cooked, to prevent odors from clinging to pot or

pan, put a little salt on a hot stove and invert the vessel over it a few minutes. Stains on table ware and tea discolored are removed with damp salt.

A dull or smouldering fire may be cleared for broiling by throwing over it a handful of salt. If salt is thrown on any burning substance it checks the blaze, but if sprinkled over coal makes it burn brighter, last longer, and there are fewer clinkers.

Add salt to the water in which black cotton goods are washed to prevent fading and turning brown. Rub rough flatirons over paper sprinkled thickly with salt. Lemon juice and salt will remove stains from the hands. Do not use soap immediately thereafter.

It is the suggestion of an experienced housekeeper that a piece of old kid makes the best and strongest loop to sew on winter coats and wraps to hang them up by. Use an old kid glove, cutting a narrow strip in the best part of the leather, roll into this a piece of coarse string, sew together neatly, and attach it to the garment with strong thread.

Moisten the buttonholes of starched collars, wristbands or cuffs a little (on the wrong side) before attempting to button them or to insert cuff buttons; they will more easily button, and the buttonholes will keep longer intact. Soiled places on bed or pillow ticks are greatly improved if covered thickly with moistened starch and placed in the hot sunshine. When the starch has dried, rub the spots which it has covered vigorously with the dry starch.

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We publish a book, "Cooking Food for Stock," which we will send free if you mention this publication when you write.

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Yours truly, Wm. E. GOGGESHALL.
Newport P. O., R. I., June 18th, 1897.

Coast Industrial Notes.

—Over 100,000 tons of ice will be stored at Truckee this winter. In some cases it is put up at a cost of 5 cents per ton.

—Capt. D. L. Bralnard has awarded to C. H. Frye of Seattle the contract for furnishing 75,000 pounds of bacon at \$7.95 per 100 pounds for the Yukon relief expedition.

—The cruiser Chitose, built by the Union Iron Works of San Francisco for the Japanese navy, will be launched next Saturday. This will be a notable event, as it is the first large modern war vessel built in the United States for a foreign government.

—The Southern Pacific and O. R. & Nav. Cos. have advanced passenger rates by rail and water between San Francisco and Portland. For a year the Southern Pacific Co.'s first-class rate between San Francisco and Portland was \$10. The new rate is \$17. The O. R. & Nav. Co.'s present first-class rate by steamer is \$5. This is increased to \$12.

—“The story is a pure fake,” was what Charles H. Cramp said when shown a dispatch from New York stating that his company contemplated putting \$10,000,000 into a ship-building plant at Seattle to undertake the building of war vessels for the Pacific. He added that the Cramp Company has no intention whatever of engaging in the ship-building industry at any place other than Philadelphia.

—Senator Lodge has introduced a bill to provide for the construction of a telegraphic cable from this country to the Hawaiian Islands and Japan, China and Australia. The bill grants a subsidy of \$125,000 a year for twenty years on the service to Hawaii and an additional \$75,000 a year for the same length of time for the extension of the line to Japan or Australia. A survey by the Secretary of the Navy to ascertain the most feasible route is authorized.

—The steamship Alameda from Australia this week brought nearly 200,000 golden sovereigns, equal to \$1,000,000, consigned to the Anglo-Californian Bank of this city. This makes the total gold received during the present season from the same source \$12,500,000—a much larger amount than has ever come from Australia as balance of trade in California's favor during the same period of time. Shippers of grain, lumber and canned goods predict a still larger business with Australia for '98.

—The Supreme Court of California has rendered a decision in which it emphasizes the principle of California law that no county, city, town, etc., shall incur indebtedness exceeding in any year the income and revenue provided for that year, and that indebtedness incurred contrary to this provision shall be void. The city of Vallejo made a contract with a San Francisco manufacturer for a certain amount of water pipe, which was delivered and paid for with the exception of \$90.85, the special fund for that purpose and for the year being exhausted. The firm sued the treasurer, who demurred on the ground mentioned, which was sustained. The San Francisco man appealed, but the Supreme Court affirmed the judgment of the lower court.

—It is alleged that the builders of the railway from Kramer to Johannesburg, Cal., intend to build to the borax mines, sixty miles distant, and thence fifty miles farther to make a connection with the Carson & Colorado Railway at Keeler. In this regard it is noted that the owners of the Johannesburg road are intimate in the interests of the Vanderhilt lines, which now include the Union Pacific and may purchase the Central Pacific when it comes to be sold under foreclosure. If this be done, it would give the new owners a direct line via Reno, Nev., to southern California and Los Angeles, independent of the Southern Pacific. The contract for the 110 miles of extension has been virtually let to Ramish & Marsh, the contractors who built the present line from Kramer.

—The relations of the great powers are changing, and the Pacific is becoming the center of their striving. The powers that adjoin this ocean are destined to be the actors in the next drama of the world and the Pacific the stage thereof. England is the greatest of these powers. This she owes to Canada and to her possessions in the East. Russia is destined to a future greater than England's present. France is making desperate efforts to build up for herself an Asiatic foothold in this company. China's vast population and wide territory make her another factor in the problem. She may be conquered and enslaved for years, but the great vitality, the great individuality, the exclusive cohesiveness of her people, seem to destine her to an ultimately independent national existence. She must eventually emerge from her position of subjection and inferiority and become one of the great nations of the earth. Japan's role will be a smaller one, but the inherent identity of her interests with China's must make them allies against Europe in working out their common destiny. In the hands of these powers lies the future of the Pacific, and the future of the Pacific is the future of the world. Our country cannot shut its eyes to this condition. The people of America, with a rapidly increasing population producing more than they can consume, with an aggressive character which brooks no opposition, with a coast line greater than that of any power of Europe, dotted with flourishing cities, constitute a factor in the future of the Orient that no apathy, no neglect, can belittle. Whatever policy we may have inherited as to entanglements with European powers must be discarded here. The people of the United States must not be content to see their neighbors to the west, with their boundless potentialities of trade, handed over, an uncontested prize, to the ambitions of Europe. America may attempt to evade the responsibility thrust upon her. She may,

with shortsighted resolution, turn her face away from her great future, but she will not succeed. The markets of the Orient are the heritage of her merchants, and the time will inevitably come when the voice of the Republic will be heard in Oriental courts with the same accent of authority as in the commonwealths of South America. It will be well if the certainty of this destiny could be recognized before European statesmanship has barred the way with “vested interests.”

Slept Like a Child.

GAINED TWENTY-SEVEN POUNDS IN FOUR WEEKS.

THE STORY OF A SOLDIER.

From the Transcript, Peoria, Ill.

No man is better known and liked in that rich tier of Illinois counties, of which Peoria is the center, than genial Chester S. Harrington of Princeville, Ill. For many years Mr. Harrington has traveled through the country on profitable journeys as an itinerant merchant, and everywhere he goes he is given a hearty welcome by the people who depend upon his regular visits for the purchase of the necessities, and some of the luxuries, of life.

Mr. Harrington is a veteran of the war, and out of this circumstance grew the train of facts that make up the remarkable experience which he related upon the occasion of a visit to the Transcript office recently. His story, telling of the evils of which the Civil War was but the beginning in his own, and in thousands of other cases, was as follows:

“I served three years in the 124th Illinois, enlisting at Kewanee, Ill. I was in Libby Prison, and of course I suffered, like many another Northern soldier. Until recently I was a member of the Princeville Post of the G. A. R.

“The strain of army life did its work in undermining my health, although the collapse did not come for years. For some time I suffered from general debility and nervousness, so badly that I could not sleep. I would sit up night after night reading, because I could not get to sleep. For fifteen years my sleep was completely broken up. Indigestion, of course, resulted, and my misery increased until it seemed I had nothing to live for. My eyes began to fail, and as my body lost vitality my mind seemed to give way also. I could scarcely remember events that happened but a few weeks before.

“I was unfitted for business, and had to abandon the road for two years. I was just able to creep around during the greater part of this time, and there were times when I could not get up at all. My brother is a doctor, but all his efforts to help me failed to give me any relief.

“My friends suggested a great many things they thought would help me, and I tried a lot of remedies, without avail. Finally, having read a great many articles regarding cures that had been effected by Dr. Williams' Pink Pills for Pale People, I decided to try them. That was in 1896. I bought a box and took the pills according to instructions. Just four days later I had the happiest hours I had known for years. That night I went to sleep easily and slept soundly as a child, and awoke refreshed. Since then I have clung tight to Dr. Williams' Pink Pills, and I have slept soundly and gained health ever since. Three or four weeks after beginning the treatment, when I had taken four boxes of the pills, I found I had increased in weight, from 119 pounds to 146 pounds. This greatly surprised my friends, who thought my case was a hopeless one. I began my work on the road again, and have continued it right along ever since in excellent health.

“Let me tell you a remarkable thing that was a side issue, but a valuable gain to me. I found that while I was taking Dr. Williams' Pink Pills, I had been cured of the smoking habit, which had been formed when I was a boy, six years old, and which had clung to me all these years. The craving for tobacco left me, and I have never experienced it since. I have recommended the pills to more than 150 people and I hope, if my experience is made public, it will be of benefit to some sufferer.”

(Signed) CHESTER S. HARRINGTON.
STATE OF ILLINOIS, ss.
COUNTY OF PEORIA,)

Chester S. Harrington, being duly sworn, deposes and says, that the matters contained in the above statement by him signed are true.

Subscribed and sworn to before me, a notary public, this 15th day of July, 1897.

(SEAL) LINCOLN M. COX,
Notary Public.

All the elements necessary to give new life and richness to the blood and restore shattered nerves are contained in a condensed form, in Dr. Williams' Pink Pills for Pale People. They are also a specific for troubles peculiar to females, such as suppressions and all forms of weakness. In men they effect a radical cure in all cases arising from mental worry, overwork or excesses of whatever nature. Dr. Williams' Pink Pills are sold in boxes (never in loose bulk) at 50 cents a box or six boxes for \$2.50, and may be had of all druggists, or direct by mail from Dr. Williams' Medicine Co., Schenectady, N. Y.

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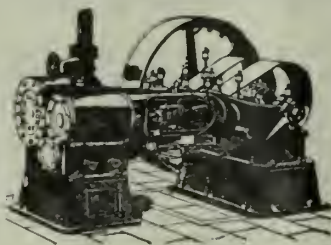
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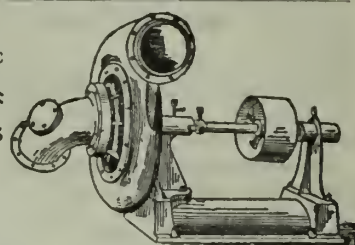
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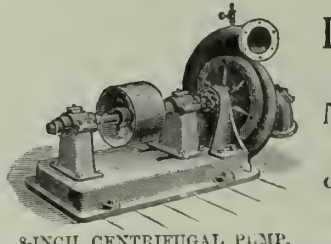
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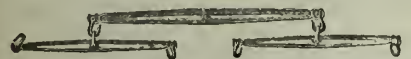
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MONEY IN HONEY!

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Pseudo-Science.

To what extent are men of science responsible for the credulity which everywhere prevails in reference to all matters relating to scientific discovery or accomplishment? This question, says *Science*, is not to be lightly set aside, for the existing condition may well create alarm among all who seriously consider the welfare of science, of scientific men and of the people generally. Several causes have conspired to bring about this condition, two or three of which may be mentioned. To begin with, during the century which is now approaching its end scientific discoveries and their applications have been so numerous and so far reaching as to practically revolutionize conditions of material existence, and they have often been so wonderful in character that it ought not to excite surprise to find intelligent people ready to accept without question announcements of inventions and discoveries of the most improbable and absurd character. Along this line the evil influence of a sensational press is enormous. It was bad enough ten years ago, but it has been greatly magnified by the recent and, on the whole, unfortunate cheapening of processes of illustration to the seductions of which nearly every newspaper in the land has yielded. To this has been added the newspaper "syndicate," by which men who know really nothing of science are employed to furnish sensational articles on scientific discovery, illustrated by sensational pictures, all of which is the more injurious because often founded upon a slender, microscopic tissue of fact. Unfortunately, some men who may be said to inhabit the fringe of genuine scientific activity lend themselves to this sort of thing and are made much of accordingly. Whole pages of this modern journalism are filled with accounts of discoveries that are going to be made, for writers of this class are shrewd in taking advantage of the fact that human interest and human memory are now practically restricted to about twenty-four hours in time. The publication of a broadside describing an alleged improvement of the telescope or microscope, in which there is absolutely nothing new that is true or true that is new, adorned with a series of cuts largely imaginary and many of which have no relation to the subject matter, has served the purpose intended when its author has received his pay from the "syndicate," and when the syndicate has scored a triumph in what in these days is called "enterprise." Even the most conservative among men of science are made to appear as willing purveyors of sensationalism by what ought to be looked upon as an unwarranted and illegitimate use of the results of carefully conducted investigations, often before such results have received final consideration and approval at their own hands.

If all impressions made by this false popularization of science were to disappear in twenty-four hours the evil would be greatly lessened, but unfortunately there are many very intelligent and thoughtful people, who ought to constitute the best support of scientific work, upon whom they are more lasting. To such the line separating the genuine accomplishments of honest scholarship from the output of sensationalism, which ought to be clear and sharp, is becoming very nebulous, and there is imminent danger of a revolt against the whole thing. The extent to which credulity has been carried was beautifully illustrated not long ago

\$100 Reward, \$100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials.

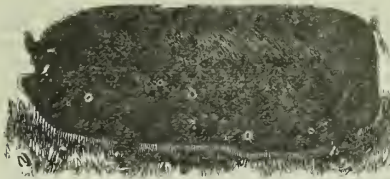
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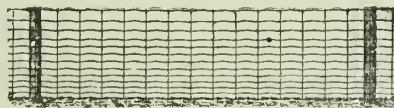
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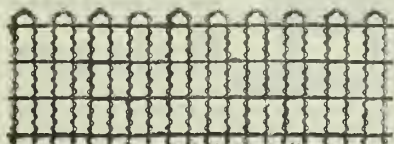
when a widely known scientific man amused himself and many friends by caricaturing, in the columns of one of our standard scientific journals, some of the phases of modern psycho-physics. So perfectly did the burlesque reflect the form and substance of some recent contributions to that science that it was immediately accepted as serious by the large majority of readers.



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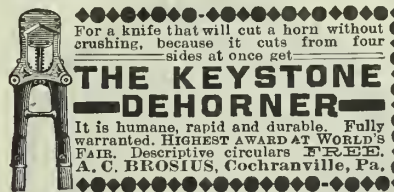
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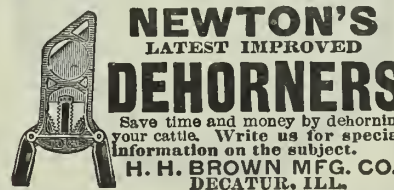
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List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING JANUARY 4, 1897.

596,468.—BITUMEN CONVEYOR—A. F. L. Bell, Carpinteria, Cal.
 596,648.—FRICTION CLUTCH—G. S. Binckley, S. F.
 596,801.—STREAM MOTOR—J. T. Breneman, Walnut Creek, Cal.
 596,804.—FEED TROUGH—J. G. Busch, Potter Valley, Cal.
 596,805.—WINDOW FLY ESCAPE—A. J. Collar, Yreka, Cal.
 596,490.—COUPLING—T. C. Edwards, Salinas, Cal.
 596,746.—BOTTLE—W. H. Fulcher, Stockton, Cal.
 596,935.—PEACH PITTER—G. E. Grier, Pomona, Cal.
 596,678.—BALL BEARING—F. H. Heath, Pomona, Cal.
 596,968.—AMALGAMATOR—J. A. Hedge, Los Angeles, Cal.
 596,812.—ELECTRIC CONDUIT—W. D. M. Howard, Redwood City, Cal.
 596,779.—STEP LADDER—T. M. Jones, Portland, Or.
 596,800.—PRUNING TOOL—G. L. Sage, Los Angeles, Cal.
 596,606.—FUNNEL—E. D. Middlekauf, S. F.
 596,714.—PAPER TOOTHPICKS—M. Furdin, Medford, Or.
 596,715.—BRUSH MACHINE—W. C. Read, Oakland, Cal.
 596,716.—BRUSH MACHINE—W. C. Read, Oakland, Cal.
 596,618.—CHAIN TIGHTENER—F. A. Redmon, S. F.
 596,832.—PIPE FOR SMOKING—B. F. Smith, Represa, Cal.
 596,645.—WOOD-BENDING MACHINE—Woodward & Brett, National City, Cal.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

WAVE AND STREAM MOTOR.—Joseph T. Breneman, M. D., Walnut Creek, Cal. No. 596,801. Dated Jan. 4, 1898. This invention relates to a device for producing power from the movement of the waves or a stream. It consists essentially of swinging suspended gates, the lower ends of which dip beneath the surface of a flowing current, a connection extending from one gate to the other whereby they are so connected in pairs that they will oscillate to and from each other, the floats being journaled vertically so that they may turn to alternately present their flat surfaces to one of the pair of shafts and the edges of the other. This allows the floats which present the flat surface to move in the one direction while the others move freely edgewise of the stream in the other direction. An intermediate mechanism is so arranged as to reverse the position of the floats when they have reached the end of the swing in one direction, and the steam acts to move the other set and return both pairs to their original position. This oscillation continues and power may be transmitted from the floats to any pulleys or other mechanism through which it may be employed.

COMBINED HARVESTER.—Benj. Holt, Stockton. No. 596,446. Dated Dec. 28, 1897. It relates to a novel apparatus for cutting, threshing, separating and cleaning grain in a continuous process by means of a machine which is adapted to travel over the field while carrying on the operation. What are known as "traveling harvesters" have usually been constructed by mounting a threshing machine upon four wheels and hinging to one side of it a large triangular horizontal frame having a reciprocating cutter bar at the front to reap the grain, a horizontal traveling belt or draper behind the cutter upon which the cut grain falls, which draper carries the grain to and delivers it into the feed house, from which it passes to the threshing cylinder and thence through the usual cleaning mechanism. The difficulty with this class of machines lies in the fact that, as the threshing machine portion is supported upon four wheels, it must, unless some provision is made for leveling it, necessarily tilt from side to side as the machine passes over irregular and uneven ground, and this throws the grain to one side or the other of the cleaning mechanism and makes the separation and cleaning very irregular and imperfect. In this new construction the threshing machine has a single large bearing and driving wheel journaled nearly centrally inside the frame and a steering wheel approximately in line with it at the front, so that the threshing machine is carried upon these two wheels in line with each other. When it is properly connected with the header frame, this connection will prevent it from tipping over. The connection between the two consists of a rack bar or equivalent bracing arm, one end of which is movable, so that the header frame inclines upwardly or downwardly in passing over uneven surfaces. The threshing machine can, by means of this connection, always be maintained nearly or quite vertical. Various mechanisms may be employed to make the connection between the two and to adjust it so as to keep the threshing machine level.

PIRES FOR SMOKING.—B. E. Smith, Represa, Cal. No. 596,832. Dated Jan. 4, 1898. This invention relates to improvements in smokers' pipes. It consists essentially in the combination with the bowl and the stem of a drip cup adjacent to the bowl into which liquid may be deposited, a chamber beyond the drip cup having a reduced neck and a larger neck at the opposite end to connect with the pipe stem. An absorbent material is placed within the chamber between the reduced neck and the inner end of the pipe stem and saturated with a vegetable oil which serves to connect

the nicotine and disagreeable vapors which remain essentially substantially on the exterior of the absorbent material and will eventually pass back into the drip cup.

PROTECTING BARN AND FEED HOUSE.—John G. Busch, Potter Valley, Cal. No. 596,804. Dated Jan. 4, 1898. This invention relates to a barn or structure which is especially designed for the economical feeding of stock, and the protection particularly of young lambs, kids and other tender animals. It consists of a structure having closed roof and sides, a floor elevated above the surface of the ground to provide a space beneath into which the animals may be collected, while the space above serves to contain hay and other feed. Along the sides of the lower part are racks and troughs arranged to suit the class of animals which are to be fed, and means for depositing the feed therein either from the barn above or from the outside. Exterior to these feeding troughs and racks are hinged doors which in stormy weather may be closed entirely, but under certain conditions can be raised up so as to allow access to the feed devices from the outside as well as the inside, while the doors thus raised practically form shed roofs to protect the animals which are under them. The ends of the barn are also provided with hinged doors and mechanism by which they can be easily raised or allowed to close so as to keep out the cold at night or in inclement weather.

WINDOW FLY ESCAPE.—Dr. A. J. Collar, Yreka, Cal. No. 596,805. Dated Jan. 4, 1898. This invention relates to an insect guard or means for reducing the number of house flies and other similar insects which congregate in the rooms. It consists essentially in the combination with the window sash of a means by which an aperture is created between the bottom bar of the sash and the window pane, forming a channel beneath the edge of the bar, and a curved plate coinciding with the channel, with intermediate means for supporting the edge of the glass. This construction is such that the flies following their usual habits will when they reach the lower edge of the glass pass out and up the curvature and thus outside of the glass. The tendency of the flies is to move upward rather than downward, consequently, when they have reached this aperture from the inside they may follow it but, but when they reach it from the outside, the tendency will be to pass on to the glass and up the outside of the glass rather than to go down beneath its edge.

Horse Owners! Try GOMBAULT'S Caustic Balsam



A Safe Speedy and Positive Cure
 The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.



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Hydraulic, Irrigation and Power Plants, Well Pipe, Etc., all sizes.

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S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, January 19, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|--------------|--------------|
| Wednesday..... | \$ 91½ @ 90½ | \$ 81½ @ 81¼ |
| Thursday..... | 89½ @ 90½ | 80½ @ 81 |
| Friday..... | 90½ @ 90½ | 81½ @ 80½ |
| Saturday..... | 90½ @ 90½ | 80½ @ 80½ |
| Monday..... | 90½ @ 91½ | 80½ @ 80½ |
| Tuesday..... | 91½ @ 91¼ | 81 @ 82¼ |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|---------|---------|
| Wednesday..... | 7s 0½d | 6s 9½d |
| Thursday..... | 6s 11½d | 6s 8½d |
| Friday..... | 6s 11½d | 6s 9½d |
| Saturday..... | 7s 0 d | 6s 9½d |
| Monday..... | 7s 0½d | 6s 9½d |
| Tuesday..... | 7s 1½d | 6s 10½d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|-----------------|-----------------|
| Thursday..... | \$1 34½ @ 1 35½ | \$1 25½ @ 1 25½ |
| Friday..... | 1 36 @ 1 34½ | 1 25½ @ 1 25½ |
| Saturday..... | 1 35½ @ 1 37 | — @ — |
| Monday..... | 1 35½ @ 1 37½ | — @ — |
| Tuesday..... | 1 38½ @ 1 37½ | 1 27½ @ 1 27½ |
| Wednesday..... | 1 38½ @ 1 38½ | 1 27½ @ — |

Wheat.

The local wheat market, other than speculative, has been quiet since last review. Quotable values declined 25¢@50¢ per ton the day following our going to press, and the market most of the week has remained in virtually the same position, although at the close (Wednesday) a little better tone was manifested. Trading in actual wheat was exceedingly light the entire week. There is not much wheat being urged to sale. There are few ships here for loading, and foreign demand for cargoes has been slow, with bids lower than figures lately current. There was some semblance of strength to the speculative markets in Europe and in the East as well as here. Exactly what it was based on was not clear. Whatever the cause or causes, they were not sufficiently potent to materially affect values for actual wheat. Here prices in the option market were influenced more or less, from day to day, by weather conditions. While May wheat was moderately firm most of the time since last issue, it averaged lower than preceding week.

The spot supply of disengaged tonnage suitable for wheat loading still continues light, but it is not any lighter than the demand, exporters showing no disposition to charter at the freight rates lately prevailing. Even at moderate concessions, it is extremely doubtful if shippers could be induced to take hold of vessels very freely, for they are unable to buy wheat in noteworthy quantity, except at figures considerably above the parity of values now current in Europe, calculating on only reasonable freight rates, materially lower than have been lately current. The European market for wheat cargoes has been recently declining, with no corresponding reduction in asking figures for wheat in exporting countries. Most of the European buying is now on English account, the continent seemingly having no immediate need for much outside wheat. With Great Britain the only prominent foreign buyer, the market is not apt to develop very much strength. Of course, this condition of affairs may speedily change for the better. As to the coming harvest in Europe, nothing very definite can be known at this time. Unfavorable weather as far ahead as six months from present date might prove decidedly disastrous to this year's crop in Europe, as well as elsewhere in the northern hemisphere, and cause values to move appreciably upward. South Africa is still drawing wheat from this center, but this cannot be counted on as permanent or as lasting long. Recent advices from Australia are to the effect that the country in question will probably not require any wheat from outside sources this year. The Argentine section is now selling tolerably freely, but it is not probable that the surplus there will prove more than a moderate average. In the meantime, the Joseph Leiter interest, manipulating the recent corner in Chicago, is reported to be carrying, in expectancy of a better market,

about 9,000,000 bushels of wheat, being 270,000 tons, or more by about twenty ship loads than all the wheat now remaining in this State. While the speculative markets were rather firm most of the week, the actual wheat was not salable at correspondingly good figures.

| | |
|-------------------------------------|----------------|
| California Milling..... | \$1 42½ @ 1 45 |
| Cal. No. 1 shipping, alongside..... | 1 40 @ — |
| Oregon Valley..... | 1 37½ @ 1 40 |
| Walla Walla Blue Stem..... | 1 42½ @ 1 45 |
| Walla Walla Club..... | 1 32½ @ 1 40 |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 white wheat per cental for the week were as follows for the options named:

| |
|--|
| May, 1898, delivery, \$1.34½ @ 1.38½. |
| December, 1898, delivery, \$1.25½ @ 1.27½. |
| Wednesday, at regular noon session of Call Board, May wheat sold at \$1.38½ @ 1.38½. |
| December, 1898, \$1.27½. |

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|----------------|------------------|
| Liv. quotations..... | 7s 2d @ 7s 3d | 7s 11d @ 7s 11½d |
| Freight rates..... | 15 @ 17½s | 30 @ 32½s |
| Local market..... | \$1.52½ @ 1.60 | \$1.40 @ 1.42½ |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

The export trade is of very fair proportions, but the business on local account is not very brisk. The market lacks firmness, noteworthy transfers not being possible except at concessions from full current rates. The last China steamer took over 15,000 barrels, but most of this flour represented deliveries on contracts. Quotations remain unchanged, although sales at extreme figures are only made in a small way and of most favorite brands.

| | |
|---------------------------------|--------------|
| Superfine, lower grades..... | 33 00 @ 3 25 |
| Superfine, good to choice..... | 3 35 @ 3 60 |
| Country grades, extras..... | 4 00 @ 4 25 |
| Choice and extra choice..... | 4 25 @ 4 50 |
| Fancy brands, jobbing..... | 4 50 @ 4 65 |
| Oregon, Bakers' extra..... | 3 90 @ 4 25 |
| Walla Walla, Bakers' extra..... | 3 90 @ 4 25 |

Barley.

A firm market has been experienced for this cereal most of the time since last review, holders in most instances refusing to accept the full current rates of previous week. Supplies of desirable qualities of Brewing and Feed Barley both here and in the interior have been reduced to tolerably small proportions, and with no positive assurance of a big crop the coming harvest, holders see no reason for being in a hurry about closing out remaining stocks, especially as values are still on a comparatively low plane. Prices in the speculative market averaged higher than previous week, and trading on Call Board showed a little more activity than had been lately experienced. At the close the market was strong, with prices at highest point current since last review.

| | |
|---------------------------------|---------------|
| Feed, No. 1 to choice..... | 35 @ 97½ |
| Feed, fair to good..... | 92½ @ 95 |
| Brewing, No. 1 to choice..... | 1 12½ @ 1 12½ |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

| |
|---|
| May, 1898, delivery, 83½ @ 90½c. |
| December, 1898, delivery, — @ —c. |
| Wednesday at regular noon session of the Call Board May, 1898, feed sold at 88½ @ 90½c. |

Oats.

Values for nearly all varieties and grades of oats are quotably about the same as reported a week ago. There has been a moderate increase in offerings of white oats, mainly from Washington, in consequence of which the general tone of the market was hardly so stiff as at date of last report. It is not considered probable, however, that buyers will succeed in reducing prices materially. Business is mostly in white descriptions. Colored oats are offered sparingly, with inquiry for them not very extensive and confined principally to select qualities for seed.

| | |
|-------------------------------|---------------|
| White Oats, fancy feed..... | 1 20 @ 1 22½ |
| White, good to choice..... | 1 12½ @ 1 17½ |
| White, poor to fair..... | 05 @ 1 10 |
| Gray, common to choice..... | 1 12½ @ 1 20 |
| Milling..... | 1 15 @ 1 17½ |
| Surprise, good to choice..... | 1 15 @ 1 27½ |
| Black Russian..... | 1 20 @ 1 60 |
| Red..... | 1 10 @ 1 45 |

Corn.

Market is not quite so favorable to the selling interest as it was a week ago, offerings proving a little larger than earlier in the month, with no corresponding increase in the

demand. Although white corn continues lower than yellow, there has been some improvement in the inquiry for white, and values for the latter have been, as compared with some time past, better sustained than for yellow.

| | |
|----------------------------------|--------------|
| Large White, good to choice..... | 95 @ 97½ |
| Large Yellow..... | 97½ @ 1 00 |
| Small Yellow..... | 1 00 @ 1 02½ |
| Eastern Yellow..... | — @ — |
| Egyptian White..... | — @ — |
| Popcorn, shelled, 3 lb..... | — @ — |

Rye.

A firm market is noted at the prices ruling. There are no large stocks here, and no evidence of heavy supplies in the interior to draw from.

| | |
|--------------------------|--------------|
| Good to choice, new..... | 1 05 @ 1 07½ |
|--------------------------|--------------|

Buckwheat.

Market is as strong as last quoted, and no probability of values receding materially very soon. Supplies have seldom been as light as they are at present, especially at corresponding date.

| | |
|---------------------|-------------|
| Good to choice..... | 1 60 @ 1 70 |
| Silverskin..... | 1 70 @ 1 75 |

Beans.

No changes of consequence have been developed the current week in quotable values for beans of any description. Contrary to expectations of some dealers who stocked up rather heavily for Klondike business, orders are now being filled for the Klondike section which are running heavily on white varieties, principally small White and Lady Washington. If this is indicative of the character of the business in beans later on with the new gold regions of the north, and many so regard it, speculative holders of high-priced colored beans may find it difficult, if not impossible, to unload their stock profitably. Aside from the filling of these northern orders there is very little doing. No large quantities of beans are now going Eastward, and trade on local account is light.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 25 @ 1 35 |
| Small White, good to choice..... | 1 35 @ 1 45 |
| Lady Washington..... | 1 30 @ 1 40 |
| Butter, small..... | 1 25 @ 1 40 |
| Butter, large..... | 1 50 @ 1 60 |
| Pinks..... | 1 75 @ 1 90 |
| Bayos, good to choice..... | 2 90 @ 3 00 |
| Reds..... | 1 50 @ 1 60 |
| Red Kidneys..... | 2 00 @ 2 25 |
| Limas, good to choice..... | 1 60 @ 1 70 |
| Black-eye Beans..... | 2 25 @ 2 50 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

Late mail advices from New York furnish the following concerning the bean market in that center, prices quoted therein being per bushel of 60 pounds:

A fair quantity of stock has come forward this week, but the tenor of interior advices has been quite strong, shippers reporting an unwillingness to market their beans at all freely. Then the trade here has been somewhat better. The amount taken for export was not large, but the call from home jobbers has shown improvement, the slight upward turn to values evidently stimulating the demand. Marrow opened at \$1.35, and soon advanced to \$1.37½, at which several hundred bbls. went to West Indian exporters. Since then a few very choice lots have jobbed out at \$1.40, and while it is still an extreme trading basis, it would be exceedingly difficult to buy in a regular way for less. Fancy Medium are relatively scarce and bring \$1.20, though the demand is light at the price. Much of the State stock branded as Medium is either more or less mixed with Pea or the screenings from Marrow. Such is of slow sale and will not bring top price. Pea have stiffened a little, recent sales of finest quality being more generally at \$1.15. Holders of Red Kidney have asked more money and made some sales at the advance. The bulk of the business up to Thursday was at \$1.60 for stock in shipping order, but a few lots have since sold higher. There is a firm holding at the close. White Kidney quiet, but in light supply and steady. Turtle Soup have cleaned up better and there is more confident holding. Scarcely any call for Yellow Eye. California Lima steady but not much stock moving; quoted at \$1.30. Green peas in only moderate demand and the feeling is a little unsettled.

Dried Peas.

Market is fully as favorable to sellers as last quoted. There are few choice to select offering, either out of spot stocks or to arrive.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 70 @ 1 80 |
| Niles Peas..... | 1 40 @ 1 50 |

Hops.

Firmness is as fully pronounced in this market as at date of former review. Hops on this coast, and especially in this State, are now mainly in second hands. This fact has doubtless considerable to do with the firm tone lately established. Even with existing foreign demand, if supplies were scattered more and were largely in the hands of growers, it is doubtful if values at present quoted could be realized.

| | |
|--------------------------------|---------|
| Good to choice, 1897 crop..... | 12 @ 16 |
|--------------------------------|---------|

A New York authority in a recent review outlines the hop market as follows:

Of the arrivals this week nearly 6,000 bales were in transit for export, about five-sixths of which were from the Pacific coast. Much of this export business was done from here, but the hops go forward on through hills of lading. Not all will be shipped this week. Cable advices from England have continued very strong, with a further advance established, especially on medium grades. Most of the English bops have passed into the hands of brewers, and buyers are turning their attention to other countries for further supplies. Inquiries have come this way more freely and good business has resulted. From Germany the reports are unusually strong, and the light home make has compelled the German buyers to go to Russia for considerable lots. The situation in the interior of this State is practically unchanged. Bad roads, coupled with the firm attitude of growers, have caused a quiet trade, but such sales as are made are at better prices, quality considered. Quite a good deal of business is reported on the Pacific coast. Our local market maintains a firm, healthy position, and while the range of values cannot be changed materially, most grades bring a little more money than horetore. Only a few really choice shipping hops are left and these cannot be bought below 19c; fair to prime grades range from 15¢@17c. No State stock goes below 12c and not much of that, but some dark, mouldy Oregon sold at 11c.

Wool.

Affairs in the local market appear to be steadily shaping themselves for more business

at an early day. There is no lack of inquiry from manufacturers and dealers, but buyers are slow to see their way to pay the prices demanded for desirable qualities. It is confidently expected that buyers will soon be operating and that there will be a fairly thorough clean-up of all good to choice wools, at the rates now quoted, before the opening of the spring season. Some recent sales have been reported at Eastern centers at relatively better values than have been obtainable here. The firmness existing in Eastern and foreign markets is made the basis of the hopeful view of the situation taken here.

SPRING.

| | |
|-----------------------------------|---------|
| Oregon Valley..... | 17 @ 18 |
| Oregon Eastern, choice..... | 13 @ 15 |
| Oregon Eastern, fair to good..... | 10 @ 12 |

FALL.

| | |
|----------------------------|---------|
| Middle County, free..... | 10 @ 13 |
| Do do defective..... | 9 @ 11 |
| Northern, free..... | 11 @ 14 |
| Do defective..... | 10 @ 11 |
| Southern Mountain..... | 9 @ 12 |
| San Joaquin defective..... | 7 @ 8½ |

Millstuffs.

| | |
|--|-------------|
| Values for bran and middlings were sustained at a little higher range than last quoted. Rolled barley was higher. Market for milled corn was without important change. | |
| Bran, 3 ton..... | 19 00@19 50 |
| Middlings..... | 21 00@23 00 |
| Barley, Rolled..... | 21 00@21 50 |
| Cornmeal..... | 22 50@23 00 |
| Cracked Corn..... | 23 00@23 50 |

Hay and Straw.

The strong market experienced for hay the preceding week has given way to an easier feeling, partly attributable to some rainy weather in the meantime, giving improved prospects for an abundance of green feed at an early date. In addition, the high prices established caused dealers and consumers to economize in various ways and make for the time being just as light purchases as possible. There are not many changes to record in quotations, but such as are made are to easier figures. Straw ruled quiet at former range of values.

| | |
|--------------------|---------------|
| Wheat..... | 12 00 @ 16 00 |
| Wheat and Oat..... | 11 00 @ 15 00 |
| Oat..... | 11 00 @ 14 00 |
| Barley..... | 10 00 @ 13 00 |
| Clover..... | 10 00 @ 12 00 |
| Stock Hay..... | 9 00 @ 10 00 |
| Alfalfa..... | 10 00 @ 11 50 |
| Compressed..... | 11 00 @ 16 00 |
| Straw, 3 bale..... | 30 @ 45 |

Seeds.

Flaxseed is higher, and very little offering from first hands. There have been no other noteworthy developments since last report in the market for the different kinds of seeds quoted herewith. Most sorts are arriving so sparingly, and are offering in such light quantity, that only nominal quotations can be given. Alfalfa is obtainable at tolerably low rates, but is not meeting with any special inquiry.

| | Per ctt. |
|----------------------------|-------------|
| Mustard, Yellow..... | 2 75 @ 3 00 |
| Mustard, Trieste Seed..... | 2 75 @ 3 00 |
| Mustard, Wild Brown..... | 2 00 @ 2 25 |
| Flax..... | 1 90 @ 2 00 |

| | Per lb. |
|--------------------|---------|
| Canary..... | 2½ @ 2½ |
| Rape..... | 2½ @ 2½ |
| Hemp..... | 2½ @ 3¼ |
| Alfalfa, Utah..... | 5½ @ 6¼ |

Bags and Bagging.

The market for grain bags is showing the same inactivity as previously reported, with no changes to note in quotable values. In other bags and bagging there is virtually nothing doing and not a new feature to mention.

| | |
|---------------------------------------|----------|
| Calcutta Grain bags, buyer July..... | — @ — |
| Calcutta Grain bags, 22x36, spot..... | 5½ @ 5½ |
| State Prison bags, per 100..... | 5 40 @ — |
| Wool sacks, 4 lb..... | 30 @ — |
| Wool sacks, 3½ lb..... | 27 @ — |
| Gunnies..... | 10 @ — |
| Bean bags..... | 4½ @ 4½ |
| Fruit sacks, cotton..... | 5½ @ 6½ |

Hides, Pelts and Tallow.

Values are ruling steady for all Hides and Pelts in prime to choice condition. Tallow of desirable grades is meeting with ready custom at prevailing rates.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|-------------|
| Heavy Steers, over 56 lbs..... | — @ 9½ | — @ 9½ |
| Medium Steers, 48 to 56 lbs..... | — @ 9½ | — @ 8½ |
| Light Steers, under 48 lbs..... | — @ 9 | — @ 8 |
| Heavy Cow Hides, over 50 lbs..... | 9 @ 9½ | 8 @ 8½ |
| Light Cow Hides, under 50 lbs..... | — @ 9 | — @ 8 |
| Wet Salted Kip..... | — @ 10 | — @ 9 |
| Wet Salted Veal..... | — @ 10 | — @ 9 |
| Wet Salted Calf..... | — @ 11 | 9 @ 10 |
| Dry Hides..... | — @ 16 | — @ 13 |
| Dry Kip and Veal, 11 to 16 lbs..... | 14 @ 15 | — @ 11 |
| Dry Calf, under 4 lbs..... | 18 @ 20 | 16 @ 17 |
| Horse Hides, large..... | 2 25 @ 2 75 | 1 50 @ 2 00 |
| Horse Hides, small..... | 25 @ 50 | 25 @ 50 |
| Colts' Hides..... | 25 @ 50 | 25 @ 50 |
| Pelts, long wool, per skin..... | 90 @ 1 30 | 90 @ 1 30 |
| Pelts, medium, per skin..... | 70 @ 90 | 70 @ 90 |
| Pelts, short wool, per skin..... | 40 @ 70 | 40 @ 70 |
| Pelts, shearing, per skin..... | 15 @ 30 | 15 @ 30 |
| Deer Skins, best summer..... | 25 @ 30 | 25 @ 30 |
| Deer Skins, good medium..... | — @ 20 | — @ 20 |
| Deer Skins, thin winter..... | — @ 10 | — @ 10 |
| Elk Hides..... | 8 @ 10 | 8 @ 10 |
| Tallow, good quality..... | 3 @ 3½ | 3 @ 3½ |
| Tallow, No. 2..... | 2 @ 2½ | 2 @ 2½ |
| Goat Skins, perfect..... | 20 @ 37½ | 20 @ 37½ |
| Goat Skins, damaged..... | 10 @ 20 | 10 @ 20 |
| Kid Skins..... | 5 @ 10 | 5 @ 10 |

Honey.

Market is without noteworthy or quotable change. There is a fair demand for best qualities of both Comb and Extracted at the figures which have been current for some weeks past. Dark honey meets with little attention, especially Dark Comb. There is some sale for Dark Extracted at very low prices.

| | |
|------------------------------|---------|
| Extracted, White Liquid..... | 4½ @ 5 |
| Extracted, Light Amber..... | 3½ @ 4 |
| Dark Tule..... | 1½ @ 2½ |
| White Comb, 1-lb frames..... | 7½ @ 9½ |
| Amber Comb..... | 4 @ 6 |

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Beeswax.

Offerings are quite light and bid fair to continue so throughout the balance of the season. Market is firm.

Fair to choice, $\frac{1}{2}$ lb. 22 @ 24

Live Stock and Meats.

Market for Beef is barely steady, present offerings, although not of large proportions, being ample for the existing limited requirements at current values, which most consumers regard as too high. Mutton is not in heavy stock, and prime to choice sells to fair advantage. Hog market is firm at a further advance, with a good demand on packing account.

Beef, 1st quality, dressed, net $\frac{1}{2}$ lb. 6 @ 6 1/2
Beef, 2d quality 5 1/2 @ 6
Beef, 3d quality 5 @ 5 1/2
Mutton—ewes, 5 1/2 @ 6c, wethers 6 1/2 @ 6 1/2
Hogs, hard grain fed, medium 3 1/2 @ 4
Hogs, small 3 1/2 @ 3 1/2
Hogs, large hard 3 1/2 @ 3 1/2
Hogs, soft and feeders 3 1/2 @ 3 1/2
Hogs, country dressed 5 @ 5 1/2
Veal, small, $\frac{1}{2}$ lb. 6 1/2 @ 7 1/2
Veal, large, $\frac{1}{2}$ lb. 6 1/2 @ 7
Lamb, $\frac{1}{2}$ lb. 6 1/2 @ 7

Poultry.

There was a firm market for Ducks, choice young Chickens and fat Hens, which were in request on account of Chinese New Year. For other descriptions of poultry the market in the main was more favorable to buyers than to sellers. Especially did Turkeys and old Chickens of ordinary quality meet with a poor market. Four cars of Eastern arrived, in addition to fair receipts of domestic poultry.

Turkeys, dressed, $\frac{1}{2}$ lb. 11 @ 13
Turkeys, live hens, $\frac{1}{2}$ lb. 10 @ 11
Turkeys, live gobblers 9 @ 10
Hens, Cal., $\frac{1}{2}$ doz. 3 50 @ 4 50
Roosters, old 3 50 @ 4 50
Roosters, young, (full-grown) 4 50 @ 5 00
Fryers 4 00 @ 4 50
Broilers, large 4 00 @ 4 50
Broilers, small 3 00 @ 4 00
Ducks, young, $\frac{1}{2}$ doz. 4 50 @ 5 00
Ducks, old 4 50 @ 5 00
Geese, $\frac{1}{2}$ pair 1 25 @ 1 75
Goslings, $\frac{1}{2}$ pair 1 25 @ 1 75
Pigeons, Old, $\frac{1}{2}$ doz. 1 00 @ 1 25
Pigeons Young 1 25 @ 1 50

Butter.

While declines in prices for butter have been less marked than during the fortnight preceding, the general tendency of values has been to lower levels, especially on the product of dairies in the Marin and Sonoma county section and on the lower coast. In the districts above named many cows have been recently coming in fresh, and naturally there is a decided increase in the output of butter. Although market is weak, prices are averaging considerably higher than a year ago, when packed butter was in liberal supply. Now the market is practically bare of packed.

Creamery extras, $\frac{1}{2}$ lb. 26 @ —
Creamery firsts 21 @ 25
Creamery seconds 22 1/2 @ 23
Dairy select 22 1/2 @ 23
Dairy seconds 20 @ 21
Dairy, soft and weedy — @ —
Mixed store 14 @ 16
Creamery in tubs 22 @ 23
Pickled roll — @ —
Dairy in tubs — @ —
Firkin, Cal., choice to select 22 @ 23
Firkin, common to fair 17 @ 20

Cheese.

Market is showing a little more activity, but there is no improvement in prices. Stocks of held cheese continue far in excess of immediate needs. Supplies of mild new of high grade are not heavy, but this description is offering at lower rates than lately current, dealers being anxious to prevent accumulations.

California fancy flat, new 10 1/2 @ 11
California, good to choice 9 @ 10
California, fair to good 8 @ 9
California Cheddar 10 @ 11
California, "Young Americas" 10 @ 12

Eggs.

Further declines have been experienced, with the market especially weak for high-priced stock, or eggs direct from henry and ranch, which ordinarily command a decided advance over store-gathered supplies. It is the exception to find poor eggs in any consignment at this time of year, so values are naturally at a narrow range. Many retailers were seeking store-gathered eggs and giving them the preference, owing to their being cheaper than offerings direct from producers.

California, select, large white and fresh 24 @ —
California, select, irregular color & size 22 @ 23
California, good to choice store 20 @ 21
California, common to fair store — @ —
Oregon, prime — @ —
Held Eastern, as to section and grading — @ —
Local Cold storage eggs — @ —

Vegetables.

Onions are in fairly liberal receipt from Oregon, but there are few coming forward at present from any other quarter. Most of the Oregon stock comes to jobbers and represents purchases at primary points, the cost laid down here being in some instances in excess of the figures realized in this center. Early spring vegetables were in slim receipt, and it was the exception where the quality could be termed choice, most consignments showing more or less injury from frost. Cabbage and Cauliflower are higher.

Asparagus, $\frac{1}{2}$ lb. 12 1/2 @ 20
Beans, String, $\frac{1}{2}$ lb. 15 @ 20
Beans, Lima, $\frac{1}{2}$ lb. — @ —
Beans, Refugee, $\frac{1}{2}$ lb. — @ —
Beans, Wax, $\frac{1}{2}$ lb. — @ —
Cabbage, choice garden, $\frac{1}{2}$ 100 70 @ 80
Cauliflower, $\frac{1}{2}$ doz. 60 @ 70
Corn, Green, $\frac{1}{2}$ sack — @ —
Corn, Alameda, $\frac{1}{2}$ crate — @ —
Cucumbers, Alameda, $\frac{1}{2}$ box — @ —
Egg Plant, $\frac{1}{2}$ lb. 15 @ 20
Garlic, $\frac{1}{2}$ lb. 24 @ 25
Mushrooms, Buttons, $\frac{1}{2}$ lb. 25 @ 26
Mushrooms, Wild, $\frac{1}{2}$ lb. 20 @ —
Okra, Dried, $\frac{1}{2}$ lb. 12 1/2 @ 15
Onions, Yellow, good to choice 2 40 @ 2 65
Onions, Yellow, cut 1 75 @ 2 25
Peas, Sweet, Garden, $\frac{1}{2}$ lb. 4 @ 6
Peppers, Green Chile, $\frac{1}{2}$ lb. 15 @ 20

Rhubarb, $\frac{1}{2}$ box — @ —
Squash, Summer, $\frac{1}{2}$ lb. 10 @ 12 1/2
Tomatoes, $\frac{1}{2}$ box or crate 50 @ 1 00

Potatoes.

Market for Potatoes was not appreciably lower, especially for desirable qualities, but there was an easier tone, owing to increased receipts from Oregon and points in this State, but mainly from Oregon. While the market most of the week inclined in favor of buyers, there are no fears of this condition long continuing or of any pronounced weakness being developed. Sweet potatoes were in reduced stock, and tendency of prices was to higher levels.

Early Rose, River, $\frac{1}{2}$ cental 60 @ 70
Peerless, River — @ —
Reds River 37 1/2 @ 50
Garnet Chile, Mission — @ —
Burbanks, Salinas 70 @ 1 00
Burbanks, River, $\frac{1}{2}$ sack 50 @ 75
Burbanks, Petaluma and Tomales, $\frac{1}{2}$ cbl 50 @ 65
Burbanks, Oregon, $\frac{1}{2}$ cental 50 @ 85
Garnet Chile, Oregon — @ —
Sweet River, $\frac{1}{2}$ cental 50 @ 65
Sweet Merced 75 @ 90

The Fruit Market.

Fresh Fruits.

The only deciduous fruit now on the market which is worthy of comment or quotation is the apple. There is no scarcity of this fruit, but when it comes to quality, the offerings are limited which are up to a sufficiently high standard to justify comment under the classification of choice to select. The market for the latter sort was firm, and the tendency of values would have been still more in favor of sellers had it not been for the excessive stocks of fair to medium qualities, to say nothing of the heavy quantities of inferior fruit which could not be relied on in some instances to bring freight charges, and would have served a better purpose if fed to pigs or dumped on the farm. Trashy fruit brings little else but trouble to the shipper and handler, and tends to injure the sale of better qualities. When it comes to fair and medium grades, moderate quantities can be advantageously disposed of, but if supplies are heavy they are crowded to sale, enabling street hawkers to take advantage of the situation. After securing them at about their own figures, they unload them at fruit stands, to hotels and families, thus crowding them on to many buyers who would come into the market for better fruit if left alone. For all grades of apples other than choice to select the market lacked firmness.

Apples, fancy, 4-tier, $\frac{1}{2}$ box 1 25 @ 1 35
Apples, choice, 4-tier, $\frac{1}{2}$ box 75 @ 90
Apples, good to choice, 50-lb box 40 @ 1 00
Apples, common to fair, $\frac{1}{2}$ box 20 @ 35
Quinces, $\frac{1}{2}$ box — @ —
Figs, Black, 2-layer box — @ —
Pears, Common, $\frac{1}{2}$ box — @ —
Pears, Winter Nelis, $\frac{1}{2}$ box — @ —
Persimmons, small box — @ —
Strawberries, large, chest — @ —

Dried Fruits.

The main feature of the market for cured and evaporated fruits is the active inquiry for Prunes, but buyers refuse to operate at other than a low range of values. Most bids are on the basis of 2 1/2c for the usual assortment of 60's to 100's, while 2 1/2c for the four sizes may be regarded as the extreme view of buyers. Slightly better figures are obtainable relatively for the small and large Prunes than for the middle sizes, the latter being in larger supply than the first named. Prunes are wanted mainly for shipment East. Apples are scarce, both evaporated and sliced in boxes, and market is firm, some minor transfers having been recently effected above quotations. Market for most other kinds of fruit is ruling steady, with no undue pressure to realize observable, either on offerings from first hands or from jobbers. A few orders are reported being filled for shipment to the Alaska district, embracing assortments of nearly all kinds obtainable except Prunes and Raisins.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, per lb. 5 1/2 @ 6
Apricots, Royal, fancy 6 1/2 @ 7
Apricots, Moorpark 7 @ 9
Apples, in boxes 7 @ 7 1/2
Figs, fancy pressed 8 @ 10
Nectarines, White 4 1/2 @ 5
Nectarines, Red 4 1/2 @ 5
Peaches, unpeeled, choice 4 1/2 @ 5
Peaches, unpeeled, fancy 6 @ 6
Peaches, peeled, in boxes 9 @ 12
Pears, unpeeled Bartlett's, halved, fancy 7 @ 8
Pears, halved, unpeeled Bartlett's 4 1/2 @ 6
Pears, quartered, unpeeled Bartlett's 4 @ 5
Pears, peeled and sliced — @ —
Plums, pitted 4 1/2 @ 5 1/2
Prunes, in sacks, 40-50's 5 @ 5 1/2
50-60's 3 1/2 @ 3 3/4
60-70's 2 1/2 @ 3
70-80's 2 1/2 @ 3
80-90's 2 @ 2 1/2
90-100's 1 1/2 @ 2

Above figures are on basis of 2 1/2 @ 2 1/2c for 4 sizes. Prunes in boxes, 1/2c higher for 25-lb boxes, 1/2c higher for 50-lb boxes.
4 sizes Santa Clara and equal 2 1/2 @ —
4 sizes San Joaquin and Northern 2 1/2 @ 2 3/4
Prunes, Silver 5 @ 8

COMMON SUN-DRIED.

Apricots, ordinary 4 @ 5 1/2
Apples, sliced 3 1/2 @ 4
Apples, quartered 3 1/2 @ 4
Figs, Black 2 @ 3 1/2
Figs, White 3 @ 4
Peaches, unpeeled 3 @ 4
Plums, unpitted 1 @ 1 1/2

The following review of the dried fruit market in the East comes through under a late date by mail from New York:

Evaporated apples have continued in light supply, and while trade has been rather quiet, attractive fruit has been held with confidence at full late prices. Sun-dried apples are also in moderate supply, but dull, and prices rather favor the buyer. Chops firm and higher; best stock generally held at 4c, though no important business above 3 1/2 @ 3 3/4c. Cores and skins have advanced slightly with some stock held at 2 1/2c. Small fruits continue quiet and unchanged; supply and demand both light. California apricots are firm, especially the cheap grades, which have an active demand. California peaches rather slow, particularly the finest fruit. Very little doing in Calif-

nia pears. California prunes more active, though prices show no material change.

Apricots, Cal. Moorpark, 1897, per lb. 7 @ 11
Apricots, Cal. Royal, 1897, per lb. 5 1/2 @ 8 1/2
Peaches, Cal., 1897, peeled, per lb. 10 @ 18
Peaches, Cal., 1897, unpeeled, per lb. 5 1/2 @ 10
Pears, Cal., 1897, per lb. 6 @ 10
Prunes, Cal., 1897, per lb. 3 @ 8

Raisins.

In the matter of quotations there are no changes to record, and in the absence of noteworthy transactions, quotable values at present represent little else than the views of holders. There is considerable inquiry from the East, but at less than quotations, holders regarding many of the bids too ridiculously low to be worthy of serious consideration. Loose Muscatel and Seedless Raisins are still in fairly liberal supply.

F. O. B. FRESNO DELIVERY.

Imperial Clusters, per box — @ —
Dehesa Clusters, per box — @ —
Fancy Clusters, per box — @ —
Boxes, London layers, 20-lb box 1 00 @ 1 10
(Usual advance for fractions.)

Loose Muscatel, 4-crown, $\frac{1}{2}$ lb. 4 @ —
Loose Muscatel, 3-crown 3 1/2 @ 3 3/4
Loose Muscatel, 2-crown 2 @ —
Sultanas 3 1/2 @ 4
Seedless Muscatel 2 @ 2 1/2
Dried Grapes 1 1/2 @ 2

Citrus Fruits.

The market for Oranges has ruled, so far as prices are concerned, about the same as preceding week. A little more business was observable, but supplies kept ahead of requirements. Cold weather and a good many frosted oranges combined to check the demand. There was some choice fruit on the market, however, and such was in very fair request. Lemons continued quiet, with prices the same as previously quoted, but market was devoid of strength, the cool weather operating against the sale of both Lemons and Limes. Latter were in light supply.

Oranges—Navel $\frac{1}{2}$ box 1 25 @ 2 50
Seedlings 75 @ 1 25
Lemons—Cal., select, $\frac{1}{2}$ box 2 00 @ 2 25
Cal., good to choice 1 00 @ 1 50
Cal., common to good 50 @ 1 00
Limes—Mexican, $\frac{1}{2}$ box 4 00 @ 5 00
Cal., small box 75 @ 1 00
Grape fruit, $\frac{1}{2}$ crate — @ —

Nuts.

There is an exceedingly quiet market in nuts of all descriptions, and values remain at as low range as previously recorded. Almonds are fairly well cleaned up, carload lots not being now obtainable. Walnuts are still in tolerably liberal supply, but stocks in the interior are being reduced by consignments being made outward.

California Almonds, paper shell 6 1/2 @ 7
California Almonds, soft shell 4 1/2 @ 5
California Almonds, hard shell 2 1/2 @ 3 1/2
Walnuts White, paper shell 6 @ 8 1/2
Walnuts White, soft shell 6 @ 8 1/2
Walnuts White, Cal., standard 5 @ 6
Chestnuts, Cal. Italian 7 @ 8
Peanuts, Cal., fair to prime 4 @ 4 1/2
Peanuts, Eastern hand-picked 5 @ 6
Pine Nuts 7 @ 8

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------------------|--------------------|----------------------|
| Flour, $\frac{1}{2}$ -sks. | 100,954 | 2,783,012 |
| Wheat, ctls. | 172,435 | 7,512,978 |
| Barley, ctls. | 96,485 | 3,581,903 |
| Oats, ctls. | 6,720 | 411,496 |
| Corn, ctls. | 6,520 | 200,029 |
| Rye, ctls. | 680 | 23,523 |
| Beans, sks. | 3,743 | 415,347 |
| Potatoes, sks. | 22,701 | 654,670 |
| Onions, sks. | 2,708 | 74,840 |
| Hay, tons. | 2,294 | 81,182 |
| Wool, bales. | 111 | 48,543 |
| Hops, bales. | 154 | 7,268 |

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------------------|--------------------|----------------------|
| Flour, $\frac{1}{2}$ -sks. | 90,804 | 1,744,084 |
| Wheat, ctls. | 218,153 | 7,240,297 |
| Barley, ctls. | 60,784 | 2,596,512 |
| Oats, ctls. | 1,566 | 11,092 |
| Corn, ctls. | 1,083 | 26,088 |
| Beans, sks. | 514 | 243,810 |
| Hay, bales. | 2,924 | 49,576 |
| Wool, lbs. | 12,740,776 | 6,898,112 |
| Hops, lbs. | 100,922 | 714,501 |
| Honey, cases. | 6 | 6,379 |
| Potatoes, pkgs. | 520 | 152,375 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, January 19.—California dried fruits, steady. Evaporated Apples, common, 5 @ 7 1/2c per pound; prime wire tray, 8 1/2 @ 8 3/4c; wood dried prime, 8 @ 8 1/2c; choice, 8 1/2c; fancy, 9 @ 9 1/2c. Prunes, 3 @ 8c per pound. Apricots, Royal, 7 @ 8 1/2c; Moorpark, 9 @ 11c. Peaches, unpeeled, 7 @ 10c; peeled, 12 @ 20c.

Moved to New Quarters.

W. C. Rarig, manufacturers' agent, has moved his office and stock to the Arizona Warehouse, No. 232 King street. The specialties of this house are the "Lean All-Steel" harrows, the "New York Champion" rakes and the "Boss" washing machine. These are all standard goods, tried and tested, and are alike of particular interest to the farmer and the farmer's wife. Illustrated and descriptive circulars will be sent upon application.

Economy in Buying Seeds.

Economy is not paying less money for a thing than you expected to pay. True economy is good management, and about the worst management a farmer can be guilty of is to buy cheap seeds and thus cut the value of his crops in half—or worse. A stream cannot flow higher than its source, and a crop cannot be any better than its seed. Real seed economy is buying seeds that bear the stamp of a house that is known to be reliable; then the planter is absolutely sure that he gets what he wants and what he pays for. In every part of the country dealers sell the absolutely reliable seeds of D. M. Ferry & Co., of Detroit, Mich., which have given uniform good results for the last 42 years. Ferry's Illustrated Seed Annual for 1898, containing information that no farmer or gardener can afford to be without, will be sent free to any one making application to the firm.

"Biography of a Yankee Hinge."

The hinge is the most important part of a barn door. No matter how good the door, let the hinge be weak and the door will sag. Then it binds on the sill and casings. The strain wrenches the weakened hinge from its fastenings and the door is shattered by the wind—the weak hinge is the destruction of the door. The Stanley Corrugated Steel Hinge combines the greatest strength with less bulk than any other form. They are 50 per cent stronger, handsomer, and cost no more than the old style; cannot rust. A cheap door with this hinge is better and lasts longer than the best door with the ordinary old style hinge. Send to the Stanley Hinge Works, New Britain, Conn., for a copy of their "Biography of a Yankee Hinge." A postal card will bring it.

The surface of the sea is estimated at 150,000,000 square miles, taking the whole surface of the globe at 197,000,000, and its greatest depth supposedly equals the height of the highest mountain, or four miles. The Pacific Ocean covers 78,000,000 square miles, the Atlantic 25,000,000, the Mediterranean 1,000,000.

A COUGH SHOULD NOT BE NEGLECTED. "Brown's Bronchial Troches" are a simple remedy and give immediate relief. Avoid imitations.

A new discovered spot on the sun, which is visible just now, is said to be 30,000 miles in diameter.

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A Practical Treatise on Raisin Grapes, Their History, Culture and Curing.

This is the Standard Work on the Raisin Industry in California. It has been approved by Prof. H. H. Ward, Prof. Wickson, Mr. Chas. A. Wetmore and a multitude of Practical Raisin Growers.
Sold only by THE DEWEY, PUBLISHING CO., or its agents at the uniform price of \$3.00, postage prepaid. The undersigned should be addressed:

PACIFIC RURAL PRESS,
330 Market Street, San Francisco, Cal.

The Rose of Cuba.

(Continued from page 56.)

hill and came in sight of the dwarf she checked her pace and went down the plank walk endeavoring to appear as if bent on any ordinary errand. In another moment the cutter came in sight, rounding in at the wharf. Her father had evidently seen its approach, for he was down at the landing.

"Too late—too late!" she cried within herself, a sob catching her panting breath.

Still she kept on, and once inside the boat-house made a light, quick passage to the corner where the chest lay behind the piles of ropes. Even as she knelt to put the key in the lock she heard steps on the flight of stone landing stairs. Thrusting the heap of cordage back against the chest, she hurried to that door of the boat-house which opened on the sea end of the wharf. Two officers had landed from the cutter and were addressing her father.

"It's not a pleasant business we've come for, captain, but we've small notion that it will amount to anything. There has been a suspicion in the department lately that there was considerable smuggling of cigars going on—on a small scale—and certain information has led to an order for us to search the quarters of the coast pilots."

Above the crisp dash and tumble of waves against the wharf each word was carried clear on the wind to the girl's painfully listening ears, and oh! what a cold fear they sent to her heart.

"You occasionally lodge a young pilot, Nick Sunderland, and we shall have to ask you to let us overhaul his room in your house."

She had need of all her self-command at that moment. Led by the captain the officers started up the wharf, to traverse which they must pass through the boat-house. Her face must tell no tales; yet as they approached she was sick with dread lest her father should remember the sea-chest. That it was locked would prove no bar to their examination, but on the contrary an incentive.

As they passed her the two officers raised their caps. Meg clenched her hands around the oars against which she leaned and followed their figures through the house with burning eyes. The instant the door blew to behind them she was again at the chest.

With the renewed chance of eluding danger there came to her a certain calmness. She worked rapidly and under excitement, and not nervously, nor did her wits desert her. On raising the lid she saw to her relief that the contents were within her power to manage. The fear had crossed her mind that there might be more bulk than she could successfully hide. But the roll of sail, which Ned had in her

presence put there only two days before, was all that lay on top of the few scattered rowlocks and fishlines. She dragged it out and, hastily filling the chest with whatever lay within her reach, she shut the lid, leaving the key in the lock.

"They shan't find anythin' to hinder their lookin' in it this time—if father should think of it as they come back."

She unrolled from the sailcloth a dozen or more boxes of Havanas, tied together—a small matter for which to disturb one's conscience, yet quite enough to furnish condemnatory evidence. Whatever was to be done with them must be done instantly, for the searching of the bare little room up at the house would take short time.

If she had thought of it, stowage behind any of the numerous belongings of the boathouse would have offered ample safety. But in her extremity the only idea that occurred to her was to sink the hateful things out of sight forever in the sea.

There lay near the door a large stone that had sometimes been used as a killick, and still had the rope attached. To this she made fast the boxes and then took a look outside. No one was visible at the house, and the cutter, to avoid pounding her bunters against the stonework of the wharf, had backed out beyond it. Lifting stone and boxes under her arm, and carrying a pair of oars in such a way as to guard against display of the boxes she came out of the boathouse and down to the beach alongside the wharf. Here she stowed her burden under the bowthwart of her own rowboat and, running the boat into the water, pushed off.

Any girl except one bred to the use of boats would have made heavy work of rowing in such a sea, but to Meg it was nothing unusual. The men on the cutter watched admiringly as the clean, strong strokes carried her round the point of rocks and out of their sight behind it. Here, taking another turn of the rope around them to make sure that they were securely bound together, she dropped killick and boxes overboard.

With the closing of the water over them, the tension of the last half hour upon her nerves relaxed. The temptation to drop her head in her hands and cry away her excitement was great, and it was well for her that the need of keeping the boat bow on the waves demanded exertion. But all the pain and shame which at the first revelation of Nick's secret had been smothered by the instant necessity for action, now came over her. Meg had her bad quarter of an hour as she pulled fiercely at the oars, heedless of what direction she was taking.

After a little it came to her, where was she going?—to Nick, of course. Not for a moment did she question that. Nick had been smuggling, but for all that he was her Nick. Moreover, he, too, must be having his bad quarter of an hour, and now, if ever, he needed her. She turned to see where she was heading, and found herself near the rocky entrance to the gully beach. Turning in and pulling hard as she neared the shore, the boat was swept on the break of a heavy wave well up onto the beach.

Nick was at her side as the keel grated on the gravel and silently held out his arms to lift her from the boat. One look at his face was enough for Meg. She gave herself into his arms, and, as he set her down on the beach, put her own around his neck.

"It's all right, Nick!" she whispered, her lips trembling, but her eyes smiling through their tears. "No one will ever smoke 'em, unless the fishes do."

A deep breath of relief escaped him. "It would've been worse if they'd taken me. But I feel as bad to have you know it, Meg, as if everybody knew it."

The red flush of shame,—that is an awful thing for any woman to see on the face of the man she loves. The blood that mounted to Nick's brow meant as much pain to Meg as to him.

"Before heaven, I never knew how bad a thing it was till I tried to tell you. It was risky an' I liked the fun—

but I never saw the meanness of it till it kep' me skulkin' here in the gully like a thief while you went to do what—"

She checked him. "It was wrong—yes, we both know it. An' we'll never put a penny of the money that came that way toward our little home, will we, Nick? An' we don't need to say nothin' more about it, now or ever,—do we, Nick?"

"Bless you for a true woman, Meg. I'll never pilot the Rose of Cuba again, nor no other ship that floats, for more than I'd rightly ought to have."

"Look, Nick! the gulls, but only three this time. 'One for anger, two for mirth, an' three—for a weddin'!'"

The Logan Berry.

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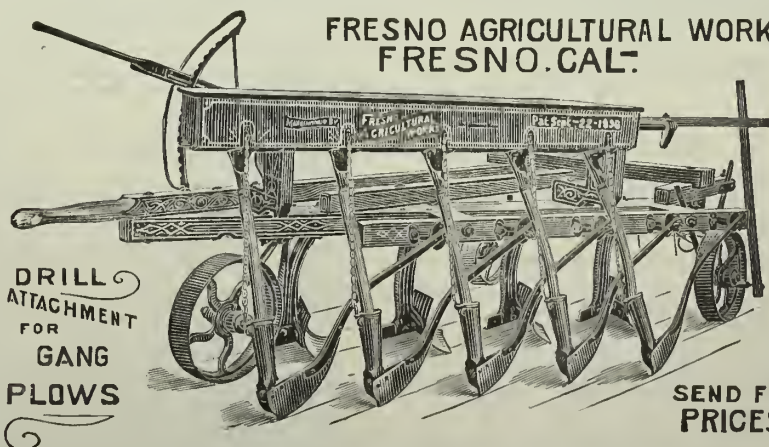
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Veterinary Column.

J. F. H., Cambridge, Mass.—A sprain such as you describe is not incurable. Use Tuttle's Elixir.

Horseman, Elgin, Ill.—There is only one sure way to locate a lameness. Apply Tuttle's Elixir, and it will remain moist on the part affected.

Mrs. F. S. T., Richmond, Va.—If you find a case of colic that Tuttle's Elixir will not cure, it will entitle you to the \$100 reward offered by Dr. Tuttle.

Willut S. Davis, M.D., Alton, N. H., writes:

"To whom it may concern:—This certifies that my horse, on the twentieth day of January, 1892, ran away with a hitching post and injured her knees so badly that she was pronounced worthless by several horse doctors. I tried various remedies for six weeks and she grew worse. I at length used Tuttle's Elixir, and in three weeks from the time I commenced to use it I had her on the road ready for work. The knees healed so nicely that it is difficult to find the scars."

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will do all that we claim for it, or we will refund your money. It will cure all forms of lameness, colic, sprains, cockle joints, etc.

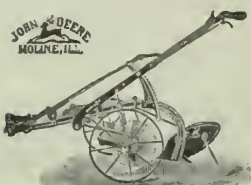
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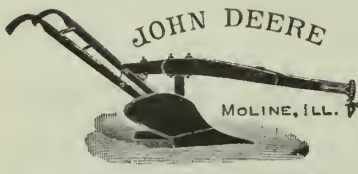
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GILPIN SULKY.



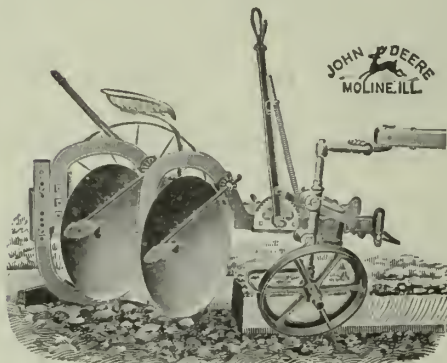
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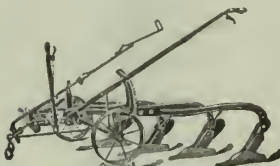
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GOODS
ARE
ALL
RIGHT
★



ZIG-ZAG LEVER HARROW.

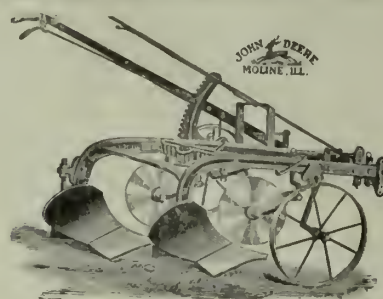


SECRETARY GANG.



THREE-GANG NEW DEAL.

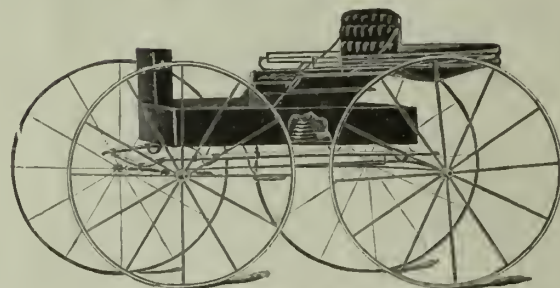
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TWO-GANG NEW DEAL.



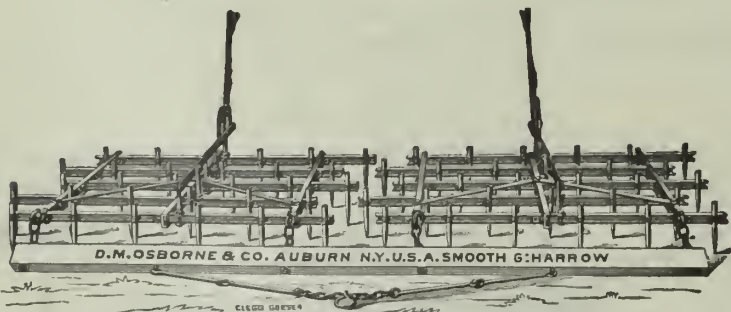
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The Forbes Cultivator is made in two sizes, eleven or thirteen teeth. The eleven-tooth cuts six feet in width, or by removing bolts can be reduced to five-foot or even smaller if desired. The eleven-tooth is calculated for a two-horse machine. The thirteen-tooth for three or four horses, and cuts either five, six or eight feet in width. This implement is commended by all who use it. For further particulars call on or address

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Patentee and Manufacturer, Guberville, Santa Clara Co., Cal.

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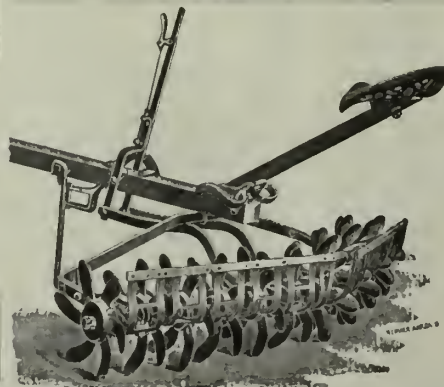
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV, No. 5.

SAN FRANCISCO, SATURDAY, JANUARY 29, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

A Bunch of Disc Harrows in San Diego County.

The extent to which disc harrows are being used is shown by the illustration on this page, where six eight-foot Osborne disc harrows are at work on the ranch of J. Gruendike, near La Costa, San Diego county, Cal. Mr. Gruendike is president of the First National Bank of San Diego and a practical farmer as well, owning many thousand acres of land in San Diego county, which he farms extensively. This year he put in several hundred acres of grain with the Osborne disc harrows, and for economical work and saving of time he finds they are unequaled.

One advantage for using the disc harrow to put in grain is the fact that the work can be done before the rain comes, when it is so dry that the use of a plow is out of the question. This means of putting in grain is rapidly growing in favor, and it is now an established fact that the disc harrow is one of the most economical implements a farmer can own, and it is as important to his farming operation as is the plow. These implements pulverize the soil thoroughly and can be worked on any hillside where a team can be driven. On stubbleground they will cut as deep as a plow, and, being much wider, will do more work.

For orchard and vineyard work the disc harrow is more generally used; and as the Osborne harrow is made with reversible gangs, which are also flexible, the soil can be thrown either way by the adjustment of the gangs, which for orchard work is an especial advantage. Then the harrows have two levers, enabling the operator to bevel the gangs independent of each other. The necessity for rapid and economical work has influenced the manufacturers of disc harrows to concentrate their efforts to bringing out a harrow that contains all of the features that would be an advantage to an implement of this kind.



SIX OSBORNE COLUMBIA DISC HARROWS ON THE RANCH OF J. GRUENDIKE, SAN DIEGO CO.

Realization.

How many housewives' dreams are realized in the culinary creation portrayed in the engraving on this page! How many times the weary home angels have admired the application of the subtle current to every manner of use, and have returned to the kitchen with the prayer that the wizard would transform its slavery into pleasant service! And now behold the realization. The clumsy, smutty and smoky old range is exchanged for a polished marble

slab, with elegant attachments of glittering china and polished metals, and the kitchen cooker becomes as lovely an ornament as is the parlor cabinet. But this is only the beginning and most obvious of the contrasts between the old and the new, which the engraving suggests. The RURAL reader will note almost countless advantages in the new method; nor will she object if the elegance of the apparatus should make it necessary for her husband to provide also the colored gentleman to operate it for her.

But the engraving is not a fancy sketch. It represents an electric kitchen operated by the Edison Company of New York, not only with a view of illustrating the system, but to provide food for their own operatives. We are assured that the electric ovens are brought to the desired heat in a very short time, and a uniform degree of temperature is easily maintained, so that the cooking process requires less time than by the ordinary heat direct from coal. For boiling sauces, vegetables, etc., special stew pans and pots are utilized, which are attached by means of a plug to the circuits and are operated independently, so that as varied a menu as may be desired can be prepared by merely attaching broilers and kettles to the service circuits. The kitchen is fitted with stone slabs for the cook's work, a white-tiled sink with hot and cold water, and in the corner standing close against the largest piece of cooking apparatus, the electric ovens, is the refrigerator, the radiation of heat being so slight as not to affect the ice in close proximity.

"This beats my old coal kitchen, for I have no ashes nor dirt, and when the heat is wanted it is there. It cooks in two-thirds the time that would be needed in an ordinary stove," said the chef. "I can bake a loaf of bread in sixteen minutes, a pie in nine minutes and biscuits in four minutes; and," he added, "your fire won't die down so that you must put fresh coal on, which deadens it for a spell and then gives too much heat."



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Any subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

Registered at S. F. Postoffice as second-class mail matter.

ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, January 29, 1898.

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The Week.

Weather and Crops.

There has been much bluster of the elements during the week but very small contributions to the rainfall. A third of an inch drifted in upon San Luis Obispo which was certainly well placed, for that county is farthest of all from its normal rainfall, as the table below strikingly shows. People are still enduring drouth with great complacency and expectancy. The exceptionally low temperatures, the frequent snow flurries around the hill-tops and the volumes of Klondike zephyrs which are going southward are all taken as barbingers of abundant rains to come. And so the people watch and wait and do not propose to give up the game until it is played out.

Severe frosts have occurred here and there in the citrus regions but up to Tuesday of this week only local and limited injury had been reported. It is now getting so late in the season that the fruit will soon be out of the woods.

The following data for the week ending 5 A. M. Wednesday, Jan. 26, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Last Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | .94 | 18.68 | 23.37 | 23.28 | 30 | 50 |
| Red Bluff..... | .00 | 6.69 | 12.25 | 14.32 | 30 | 56 |
| Sacramento..... | .08 | 5.36 | 7.41 | 10.78 | 30 | 56 |
| San Francisco..... | .07 | 5.19 | 11.30 | 12.89 | 36 | 55 |
| Fresno..... | .01 | 2.30 | 4.00 | 5.32 | 24 | 54 |
| San Luis Obispo..... | .34 | 2.86 | 9.75 | 10.26 | 26 | 52 |
| Los Angeles..... | .06 | 3.75 | 8.44 | 8.67 | 34 | 62 |
| San Diego..... | .07 | 3.29 | 7.07 | 4.91 | 30 | 54 |
| Yuma..... | .04 | 1.10 | 4.76 | 2.12 | 26 | 62 |

Dairy Inspection at San Francisco.

The San Francisco Board of Health has arranged for resumption of dairy inspection, some time back discontinued for lack of funds. A corps of nine inspectors has been named and all cows which show traces of tuberculosis will be destroyed.

Call for a Producers' Convention.

The following call for a convention of producers in the interest of a free public market at San Francisco has been issued by the San Francisco Farmers' Club:

The Board of State Harbor Commissioners having by formal resolution invited the producers of perishable products to appoint a permanent committee to represent the interests of such producers in all matters relating to the free public market required by law to be established on State property on the water front of San Francisco, the San Francisco Farmers' Club, at the request of several organizations of producers, issues this call for a mass and delegate convention of producers,

and the representatives of producers' organizations, to meet in San Francisco, in the Chamber of Commerce, Merchants' Exchange building, California St., between Montgomery and Sansome Sts., San Francisco, Cal., on Wednesday, Feb. 23, 1898, at 10 o'clock A. M., for the purpose of electing and instructing such committee, and for such other business as may come before the meeting.

The Harbor Commission has declared that such committee, when appointed, will be recognized by the Commission as the representative of the interests appointing it.

In the establishment of the market it is believed that many important and difficult questions will arise, as to which it will be desirable that the producing interests should be represented before the Commission in some authoritative way, and it is therefore requested that all Granges, Farmers' Clubs, alliances, fruit exchanges, poultry associations, creameries, and all other organizations of producers shall be represented by delegates in order that all interested may have a voice in selecting the committee and framing its instructions. All newspapers in the State are requested to copy this notice, and all producers who see it are requested to attend in person or by representative. Organizations sending delegates are requested to notify the secretary of this club of all names of delegates, that the roll, as far as possible, may be made up in advance.

By order of the Club.

CHARLES E. POST, President.

VICTOR L. O'BRIEN, Secretary.
137 Montgomery St., San Francisco, Cal., Jan. 22, 1898.

The Local Produce Markets.

Since our last writing there has been a marked movement for the better in the wheat market, and current prices, both for spot and speculative, are considerably advanced as compared with the figures of last week. Shipping grades are 50 cents per ton better, and firm at this advance; and for milling grades the conditions are better still. Choice milling wheat is very firm and options are again soaring, in sympathy with the situation at Chicago. To some extent the improvement in tone is a reflection of the great speculative deal at Chicago; but it has a solid basis in the fact that stocks are lighter in Europe. Trading is rather more active in the San Francisco market, but holders show no disposition to all let go at once, as it frequently happens at this time of year. We have sought without success to come at some approximation of the amount of wheat of last crop still in the hands of producers. It is, however, the universal opinion of dealers that the amount of such holdings is unusually heavy for this season.

In the dried fruit market we have to report a firm situation, though the range of prices remains low. For prunes there is an active demand, but at prices below the ideas of holders, many of whom continue firm in the faith of better prices before the end of the season.

The Yukon demand is now a considerable factor in the general produce market, and particularly affects the prices of vegetables in dried form. Onions are particularly in demand and we hear of orders for the Yukon being placed in Germany.

Live-stock is firm at last quotations, with a little advance on hogs. Hay has jumped \$1 per ton, and all kinds of mill feed are very strong, due to the continued dry weather, which prevents the normal development of pasturage.

State Board of Agriculture.

The State Board of Agriculture will meet at Sacramento next Tuesday to elect officers for the ensuing year. It is the opinion of those best informed that A. B. Spreckels will be chosen president of the Board, and that he will be elected unanimously. The election of Mr. Spreckels to the presidency of the Agricultural Board will also make him a member of the Board of Regents of the State University. The vacancy in the Board of Agriculture caused by the election of William Land as Mayor of Sacramento will be filled by the appointment of F. D. Cobb, of Stockton.

A Peculiar and Serious Freeze in Florida.

The Florida Agriculturist of Jan. 12 gives particulars about the serious visitation which that State received on Jan. 2, as follows: "For some unknown cause the weather clerk seems to have a spite at us and sends down his chilling blast just at a time when the people of Florida begin to feel that they are in a fair way to abundant success. Through the whole State confidence was about fully restored from the terrible set-back of the two freezes of December, 1894, and February, 1895, when, on the 2nd, we were visited again with one of the most peculiar and far-reaching freezes, and one which moved the mythical frost line close to the equator. One of the peculiar things regarding this last freeze was the fact that the middle and southern part of the State seemed to suffer much more than the northern part. At Jacksonville there are orange trees with leaves as green and fresh as though there had never been a cold, while at DeLand the trees will lose their leaves and the young tender bud-wood will be cut back. Further south we hear that some trees split open the next day after the cold and that a large percentage of the young buds would be killed to the 'bank,' and that the vegetables were killed at Sanibel island.

"It is our candid opinion, however, that the most damage is not so much in the loss of the orange trees and vegetables as in the loss of confidence.

"It will be from thirty to sixty days before the extent of damage can be told, as there is no way of

telling how much the orange tree is hurt till it commences to grow, and sometimes the full extent is not known till midsummer. If there is anything fortunate about the freeze it is the fact that the low temperature did not remain but a short time, thus greatly lessening the amount of damage.

Further Particulars.—Mr. Richard Klemm of Winter Haven, Fla., in a letter to the *Sugar Planter's Journal*, under date of Jan. 5, 1898, says:

"Things have changed of late. The latest cold wave, Jan. 3rd, visiting our State has undoubtedly done great damage. How much it is too early to state, but it appears that the southern part of the State, which escaped three years ago with little damage, has suffered more this time than the northern part, which was nearly destroyed three years ago. For instance, Jacksonville reports 24°; Barton (Polk county), 18° and Ft. Meade, twelve miles farther south, 15°. This section (Barton, Ft. Meade and Punta Gorda), which has just shipped their fine crop of oranges, is, I am afraid, ruined, as trees everywhere are cracked wide open. Orlando's big pineapple plantations are frozen out. I had on my place here 30° in the morning of Jan. 3rd, but I kept up plenty of big fires, which saved every one of my trees, so that they will hardly shed a leaf. I hardly think that other nurserymen have been as fortunate."

Preparing Candied Citron.

TO THE EDITOR:—Will you be so good as to give a recipe for making the candied peel of the citron of commerce?
PASADENA.

There is very little literature on this subject, but perhaps when our correspondent reads the following outline of the method it will give him a suggestion to work by, and he can make experiments of his own. We quote from a pamphlet entitled "Citrus Culture in California," by B. M. Lelong, Secretary of the State Board of Horticulture. The pamphlet is now out of print and copies cannot be had:

The fruit, when bright yellow, is picked and placed in barrels filled with brine, and left for at least a month. The brine is renewed several times, and the fruit allowed to remain in it until required for use, often for a period of four or five months. When the citrons are to be candied they are taken from the barrels and boiled in fresh water to soften them. They are then cut into pieces, the seed is removed, and the fruit is again immersed in cold water, soon becoming of a greenish color. After this it is placed in large earthen jars, covered with hot syrup and allowed to stand about three weeks. During this time the strength of the syrup is gradually increased. The fruit is then put into boilers with crystallized sugar dissolved in a little water and cooked; then allowed to cool, and boiled again until it will take up no more sugar. It is then dried and packed in wooden boxes.

Weather and Crops.

SUMMARY OF THE REPORT OF THE U. S. WEATHER SERVICE FOR THE WEEK ENDING JANUARY 25, 1898.

General Summary.

As in the preceding report the rainfall is again much below the normal for this time of year throughout the whole State. In the central, northern and coast districts the deficiency is from three-quarters to an inch, and south of the Tehachapi half an inch. In the extreme northwestern portion rain fell every day, but the total amount was much below the normal. The week was also marked by continued cold weather. The mean temperature for the week has been from 20° to 60° below the normal throughout the entire State. A heavy norther prevailed in the Sacramento and San Joaquin valleys on the 23d. Frosts were frequent during the week and in several localities some damage to citrus fruit is reported. The cold weather has benefited fruit trees by preventing premature budding. In some of the northern fruit valleys, it is reported that almond buds were about to come out. The cold and dry weather has been hard on feed and stock. Rain is much needed for growing grain.

SHASTA.—Rain needed. Seeding well advanced.
BUTTE.—No injury yet to fruit trees by frost. At Oroville, clear and frosty during the week. Citrus fruits have been slightly damaged by frost. Grain doing well.

GLENN.—Cold and dry. Farmers are uneasy.
DORADO.—Heavy frost, but no damage. Farmers need rain.

SOLANO.—Clear and cold. Grain retarded by frost. Rain greatly needed. Cold weather excellent for keeping huds back. In some spots almond buds about to come out.

SACRAMENTO.—Clear and cold. North winds prevailed. Rain needed badly.

COLUSA.—Dry and cold with severe frost. Crops are damaged.

SAN JOAQUIN.—Cold, dry north winds have taken moisture out of the soil.

MERCED.—Light rain. Heavy frost; no damage reported. Farmers plowing. Need rain for growing grain.

STANISLAUS.—Plowing still delayed for rain. Pruning vineyards. Cold and dry.

KERN.—Good, slow growing weather. Land in fine condition for late plowing. Showers in the valley; snow in the foothills. Sufficient moisture for a month.

KINGS.—Cold and dry with north winds. Farmers awaiting anxiously for rain.

FRESNO.—Light rains and fogs beneficial to cereals at Fresno. At Firebaugh severe frosts checked growth of grain. Rain much needed.

SONOMA.—Extremely cold weather with north winds very hard on feed and stock. Grain growing slowly.

NAPA.—Frost has done little if any damage.

LOS ANGELES.—(Bassett).—Three-fourths of grain crop seeded and looking well. (Duarte).—Favorable for oranges and other citrus fruits. (Los Angeles).—Rain needed although crops are not suffering. Frosts, but no damage to crops. (Pomona).—Continued cold weather; slight damage to oranges and lemons. (San Fernando).—Heavy frosts but no damage. Rain needed.

VENTURA.—Rain needed. Cold with dry east winds.

SAN BERNARDINO.—Cold weather coloring the oranges finely. Heavy winds culled the fruit somewhat.

RIVERSIDE.—Cold with considerable wind. Oranges in good condition; large acreage of grain in the back country; week favorable for seeding.

SAN DIEGO.—Days of sunshine, clear frosty nights; seeding pro-

growing rapidly. Pasture scant on account of the light rainfall and cold weather. A larger acreage than ever before will be put in grain: early sown grain growing well.

EUREKA SUMMARY.—Low temperature has retarded growth of grass, but has been beneficial to fruit, preventing premature budding. Grass is still good.

AGRICULTURAL REVIEW.

CALIFORNIA.

Alameda.

AFTER MANY DAYS.—H. F. Whitman, of Alameda, secretary of the California Pigeon and Homing Society, reports the return of a homing pigeon that has been lost or detained for one year. It was a red checkered cock, number 116, and was entered in the race for the Mechanics' Institute cup from Gilroy, September 22, 1896, coming within forty-five seconds of winning third prize, forty birds competing. It disappeared while being trained for the Croley cup race from San Jose, on January 30, 1897, and, as it had flown over the route several times, it was taken for granted that it had fallen a prey to gunners or bawks. The party who held the bird for a year, hoping to make it forget its old associations, will probably be surprised to know that it has returned to its loft in that city in good condition.—Oakland Enquirer.

Fresno.

SUB-IRRIGATION AND THE MUSCAT VINEYARDS.—At the meeting of the Farmers' Club yesterday afternoon the question of deep drainage canals through the county was discussed. It is the opinion of the club that sub-irrigation, where it comes so near the surface of the ground during the months of April, May, June and July, is working serious injury to the Muscat vineyards, and unless some change of the water level at the above seasons is effected, certain ruin to many of the vineyards and orchards will be the result in the near future.—Fresno Republican.

CHADDOCK ON RAISINS.—E. G. Chaddock, who has been making an extended business trip through the Eastern and Middle States, has returned to Fresno. During his absence, Mr. Chaddock visited Washington, Philadelphia, New York, Baltimore, Boston, Buffalo, Detroit, St. Louis, Chicago, St. Paul, Kansas City, and other important business centers. He did not find any large supply of raisins, but owing to the lack of any established grade, the absence of concerted action on the part of growers and sellers at this end of the line, and the fact that some raisins have been slightly damaged by rain, the Eastern buyers have been able to keep the price of raisins down. To a representative of this paper, Mr. Chaddock said this forenoon: "I did not find any large supply of raisins in any of the cities that I visited, but the trade is indisposed to buy except for immediate consumption. There is also a disposition shown to regard all raisins, or nearly all, as having been damaged by rain. Buyers are disposed to make reductions on all f. o. b. sales, to bring them down to the level of prevailing prices at the time of arrival. In this way the price has been continually hammered down, and the consumption has not been sufficiently active to counteract this tendency. There is, however, a prevalent impression that a more active demand is likely to spring up. This is due to the present light holdings and reasonable firmness at the western end of the line. It is thought that a further decline will be prevented, and that prices may possibly improve, especially in two and three crown raisins. I am of the opinion that all the raisins on hand will be wanted before the next crop, but that it will be difficult to advance prices very much unless there can be some concerted action on the part of the holders to bring it about. The chief weakness is the want of any mutual understanding, or effort to work together. The Irishman's pig in a drove by itself represents the situation of each seller of raisins. The lack of any authorized standard of grades puts all producers at the mercy of the Eastern buyer."—Fresno Expositor.

Humboldt.

FRUIT PEST.—The matter of guarding fruit trees against pests should appeal to the selfish instincts as well as to the public spirit of every fruit grower. Each neglect on his part enhances his chances of loss. We noted the fact a few days ago that several carloads of fruit had been condemned at Oakland, and the whole returned to the producer. Not only was there the loss of a large amount of fruit, but a heavy freight bill to pay, because pest-infected fruit had been forwarded from somebody's orchard. Such loss is the most aggravating kind of loss. It means not only to see one's crop destroyed after it is gathered, but it means putting your hand in your pocket to pay out hard-earned money to pay for moving the unmarketable stuff that has been condemned. The Horticultural Commission should be aided in every possible way in keeping down the fruit pests.—Eureka Watchman.

Kings.

A DROVE OF eighty-six horses belonging to Ed Erlanger, of Lemoore, and sold at Parkfield on execution Saturday, brought \$300, or not quite \$4 a head. One animal was a mare, the mother of Noggins, with a record of 2:12. The mare cost \$1500 a few years ago.—Salinas Index.

Lake.

A NEIGHBORHOOD BOUNTY SCHEME.—As the sheep men of Upper Lake and vicinity have lately been greatly troubled by the killing of sheep by coyotes, they have found it necessary to do something for their protection. With this object in view they have banded together and each sheep owner agrees to pay for each coyote scalp the sum of 10 cents for each 100 sheep owned by him, and as there are quite a number of sheep in that vicinity, this bounty is quite a tempting one. When it is remembered that the sum paid by the sheep owners is in addition to the reward paid by the county, it would seem that it would be a paying business to hunt coyotes in that vicinity.—Clear Lake Press.

Los Angeles.

EASTERN FOREST TREES.—Superintendent Mills of the Experiment Station has received about 10,000 Eastern forest trees, which are to be distributed at the various railroad stations from Yuma to San Francisco. The consignment consists of elms, sycamores and other trees, which will be given a trial in the various kinds of climate of the State. It is the work of the State University.—Pomona Times.

SUGAR FACTORY ENLARGED.—Mr. J. Ross Clark of the Alamos Sugar Company says that the company is now placing its new machinery, which will enable it to double its former output during the coming campaign. Fifty men are at work now and by the first of next month there will be 100. It is planned to have the machinery all in place by June 1, a month ahead of the opening of the campaign on July 1. The acreage planted about the factory has been increased to 7000 acres, or double last year's planting. This will make a yield of about 80,000 tons of beets to be turned into sugar this year.—Los Angeles Express.

OLIVE MATTERS.—The olive factory of C. P. Grogan & Co., near the Main street bridge in East Los Angeles, has finished its season's work. About 400 barrels of pickled olives were put up, or about 20,000 gallons. Of these some fifty barrels are slit olives. The average value is about \$25 a barrel, representing the sum of \$10,000. Interest in the olive industry of this section continues to increase. Dealers report a constantly increasing demand for olive trees, and the supply appears to be almost exhausted. * * * According to the

Winchester Record, J. A. Brown has begun shipping pickled olives from his Big Springs ranch, south of Hemet, and estimates that he will have 1000 gallons to dispose of, besides some oil. He is making an especial effort to develop a demand for ripe pickled olives in the East, and to build up a trade in shipping the olives in ten-gallon kegs to retail grocers under a liberal guarantee. The olives are sold at 70 cents a gallon f. o. b. Hemet. He reports that he has received numerous small orders, and is satisfied with the results of his work.—Los Angeles Times.

Orange.

THE OLDEST CALIFORNIA COLONY.—Anaheim is the oldest colony in the State. The first vines were planted on the site of the colony in 1853—forty years ago. The early history is one fraught with interest, because, as may well be imagined, there were obstacles to contend with and overcome which required the exercise of patience as well as of forethought and ingenuity. The progress of the colony was successful, and the pioneers have lived to see the county, which was a vast cattle range when they first beheld it, transformed into the richest, most fertile and most desirable county in California. The Anaheim pioneers feel a pride in this, for it was they who first rescued from the browsing herd the soil which produces fruits and wines and food for millions of people. It was they who first demonstrated the possibilities of land which, in those early days and for years thereafter, was considered unfit for the growth of anything but the natural grasses. They planted the vine, and it grew so luxuriantly that they were satisfied, and did not seek to experiment further. But as time progressed there came new people with new ideas, and the colonists were in their turn surprised at the wonderful diversity of products which the land about them was made to produce. The domain of the cattle king was restricted more and more every year, and the land wrested from him was planted with the orange, the lemon and lime, the apple, the peach and the pear. Anaheim was for so long an isolated section of the sparsely settled county that it may be said to have been an empire in itself. The people made their own laws and enforced them; they dealt with affrays as they sprang up with no other restraint upon their actions than that of a sense of stern justice and a desire to do what was right. The town has grown into one of the most flourishing communities in the State, and on the next Fourth of July it will celebrate the fortieth anniversary of its founding in a manner befitting the occasion.—Gazette.

Riverside.

THE DAIRY STOCK ORDINANCES.—The dairymen are coming to feel that life is being made a burden to them by the host of ordinances that are being made regarding their business. Doctors and local health officials want no milk sold except from tested cows kept in stables approved by the health officials, and the milk must be tested by a chemist and bacteriologist in some localities. Doctors, veterinarians, local and State cattle commissioners, etc., must inspect the dairy before a permit is issued licensing the farmer to market his milk. If this sort of thing is carried to its logical conclusion, we shall not dare to drink anything but chalk and water, nor eat anything for butter except oleomargarine. Proper regulations are all right, but there is danger of creating a regular hierarchy of such officials to fatten off the milk industry, and make all sorts of bacteriological experiments of no practical value at public expense.—Riverside Press.

THE ORANGE MARKET.—There is very little change in the Eastern markets. This is not so much due to the frosted fruit which has been dumped on the markets as the large shipments of green fruit earlier in the season. This had the usual result of creating the impression that we had no thoroughly ripe fruit. Both the trade and the consumers are now suspicious of California oranges, and confidence will not be restored until a sufficient quantity of thoroughly ripe fruit has been distributed. Various estimates have been made of the total output of oranges from southern California this season. The Press has obtained estimates of the crop from the railroads and a number of the largest shippers, as well as some of the leading newspapers. The consensus of opinion would make an average of 10,000 carloads, or 3,360,000 boxes.—Riverside Press.

San Bernardino.

CHINO'S GROWTH.—Five years ago there was only a small store and a printing office on the Chino ranch, the establishments drawing their support from the farmers in the vicinity. To-day the town of Chino claims over 1000 people, which population is almost doubled during the beet-sugar campaign. The erection of a \$27,000 High School during the past year is evidence that the people of Chino think of something besides material affairs.

San Diego.

ANOTHER CITRIC ACID PLANT.—The San Diego Land and Town Company has begun operations on the building of a citric acid factory in this city, to be completed by March 1st. The plant will be able to work up ten tons of lemon culls daily. This establishment, says the National City Record, will solve a problem that has vexed the citrus fruit growers of this county, and will be of great benefit to them, as it will permit them to dispose of large quantities of fruit which have heretofore gone to waste. Beside handling all its own culls lemons and other culls from National City, Chula Vista and Sweetwater growers, the company will be able to successfully handle the La Mesa, Lemon Grove and El Cajon products, and being connected by rail with every section of the county, shipments of fruit that would otherwise go to waste can be promptly effected, and a new source of income spring out of what has been practically a total loss to the great majority of, if not all, growers. Later on cull oranges may also receive some attention.

San Joaquin.

STOCKTON, Jan. 20.—Mrs. L. C. Pope began suit this afternoon against the Farmers' Union and Milling Co. for \$5600, which she alleges is the value of 2776 sacks of wheat she had stored in the warehouses of the company, which were recently destroyed by fire. Even if Mrs. Pope wins the suit, it is not likely that many more, if any, will follow, as most of the depositors have already been paid. Yesterday the plaintiff demanded the wheat of the company, offering to pay the storage charges—75 cents per ton. The defendant refused to deliver the wheat, hence the suit. She also demands interest at 7 per cent, with costs of suit.

San Luis Obispo.

THE Union Sugar Co. has decided to build at once a sugar factory at some point on the P. C. Railway and is asking for bids for its construction under bonds to have it ready for grinding beets by the 1st of September, 1898. Four carloads of beet seed have already reached San Francisco for the company, and the beet seeders have been contracted for. In conversation with Mr. Burr last evening, we learn that active building operations will commence early next month. He said that he built the Alvarado factory in four months, and that, if it was necessary, he could do as well again.—Arroyo Grande Herald.

San Mateo.

THE BAY BOULEVARD.—If San Mateo county begins the construction of a boulevard from the Santa Clara line to the San Francisco line, the latter counties will have to follow suit. San Francisco will have only a few miles to build, and this county can continue the road around the bay to the Alameda line at a very little expense. Alameda county will then complete the circuit by continuing the road to Oakland, and this

section of the State will possess the grandest and most picturesque boulevard in the United States.—Mercury.

Santa Barbara.

APPLE PRODUCTION.—Commissioner Dorris reports that between 21,000 and 22,000 boxes of apples have been shipped, and that about 2000 boxes are remaining on hand for shipment; that about two and one-half carloads of dried fruit have gone forward, with considerable on hand yet to ship. The coming year will give, if we have a ample rain, a great increase over these figures.—Lompoc Record.

Santa Clara.

SPRECKELS-MILLER LAND DEAL.—The publication of the negotiations of Claus Spreckels for the purchase of the Soap Lake tract of land has afforded a subject for general discussion during the past week. The Soap Lake tract belongs to the Lux heirs, but is held under a lease by the Miller & Lux corporation. It has been known for some time that the Lux heirs were anxious to dispose of some of their real estate, and that may make the deal more easy for Mr. Spreckels. As it would add to the value of Henry Miller's property in this locality to have Spreckels improve the tract in question, and perhaps locate a sugar factory here, it is easy to believe that he would encourage the sale of the land.—Gilroy Gazette.

CREDIT CLAIMED.—The shipments of dried fruit from this country to Europe during the last six months are a tribute to the energy and the enterprise of the Santa Clara County Board of Trade, and they indicate what can be accomplished in the European field by the fruit growers, if they work together for a further extension of that market.—San Jose Mercury.

IN THE SANTA CLARA ORCHARDS.—The brown scale, according to investigations made by Commissioner Ehrhorn, is about eradicated in this valley. It crops up once in a while, but the treatment is so well understood, and it has so many enemies that little danger from it may be feared. The worst of the scale family is the black fellow. It is tougher than the brown scale and harder to exterminate. The introduction of large colonies of the Australian ladybird will rid the orchards of it in time. A pest which is doing great damage to the young peach trees at the present time is the peach moth. The best remedy for the peach moth is kerosene emulsion. When used in winter it is prepared after the following formula: Coal oil (1500 test); four gallons; washing soap, one pound; water, two gallons. Dissolve in water by boiling and add this boiling hot to the kerosene. Churn violently for five minutes by pumping the liquid back upon itself. The liquid should have the consistency of cream. Use one part emulsion to ten parts water. The best results are secured by applications. Owing to the wet condition of the soil the orchardists in this valley have discontinued the use of the carbon bisulphide as a remedy for the peach horer. A difference of opinion as to its effect upon the trees still exists, and no definite conclusion can be arrived at until next fall, when the trees which have received the treatment will show whether they have been injured or not. Horticultural Commissioner Ehrhorn is of the opinion that it is a safe agent, but in order to prevent injury to the trees it must be used according to certain directions. At present great interest in fertilizing is being taken by the orchardists of the valley. An experiment made by Commissioner Ehrhorn with muriate of potash has just received complete verification by experiments on the same line made in Oregon. It was observed in some of the large orchards of that State that the fruit, particularly prunes, had decreased in size and deteriorated in flavor. The owners began to apply ordinary commercial fertilizers to the soil. Some benefit resulted, but not enough to be satisfactory. In 1896 muriate of potash was applied to the land about a number of French and Italian prune trees. The effect was remarkable. The prunes on the treated trees were very much larger in size than those on the trees not treated with potash. On one variety they were almost doubled in size. The fruit was also much sweeter on the trees which had received the benefit of the potash.—San Jose Herald.

Santa Cruz.

WATSONVILLE SUGAR FACTORY.—The beet factory and the growings of the sugar beets have been most effective agents in bringing prosperity to this city and valley. Without this industry this community would not have escaped a visitation of the stringent "hard times" which other sections of the country have experienced. Now that the only point of difference in the 1898 contract has been removed, the sugar beet industry should show strongly to the front in Pajaro valley this year.—Pajaronian.

SANTA CRUZ papers report the burning of N. Boscovich's packing house at Soquel last week. Loss \$3000.

The planting of an apple tree does not open the gateway to sure and permanent financial returns. The man who cares for his trees and keeps down the pests is the party who is going to prosper from orchard ownership. There is a good market for first quality apples each year, but there is no profit in culls and wormy fruit at any time. Careful handling of orchards, and successful pest fighting, will ensure good profits in this, California's best and surest apple district.—Pajaronian.

The onion crop is going to receive the attention of many farmers this year. Onions have been a good price this year, and it is expected that good values will continue owing to the heavy demand there is bound to be for this vegetable for drying purposes.—Pajaronian.

Solano.

BLUESTONING WHEAT.—A Tremont correspondent of the Dixon Tribune calls on the University professors at Berkeley to "make some practical experiments in the way of demonstrating whether or not the practice of bluestoning wheat for the purpose of preventing rust is a success. Farmers will not be satisfied with one trial, but demand a series of experiments lasting through four or five years. Before now, some of our farmers have ventured far in this direction and have been quite successful in producing successive crops without bluestoning, but there would come a year when their grain would be nearly half smut, blighting their hopes and shattering their faith in general. Something more than a scientific treatise must be produced to satisfy farmers."

Yuba.

GOOD CROPS EXPECTED.—General Minis says he has never known it to fail that whenever snow falls in the Sacramento valley the farmers harvest good crops that season. In this opinion he is confirmed by many other old settlers whose experience and observation entitle their opinions to great weight. The General considers it a foregone conclusion that Yolo county—indeed, the whole Sacramento valley—will have abundant crops this season.—Woodland Democrat.

OREGON.

OREGON FRUIT SITUATION.—It is to be regretted that the success that has attended the production of fruit unsurpassed in quality and in vast quantities in the Northwestern section has not as yet extended to the commercial feature of the industry. In other words that fruit growers at large have not yet been able to realize such returns from their labor and painstaking as the effort deserves. A variety of causes have conducted to this result, chief of which is the distance from the world's markets and the perishable nature of the product. There are other reasons, of course. Careless handling in picking and inexperience in packing have brought much painstaking endeavor that preceded them to naught, but there is evidence on every hand of an earnest desire to correct all mistakes of this character.—Oregonian.

HORTICULTURE.

The Situation in Lemons.

By N. W. BLANCHARD at the University Farmers' Institute in Los Angeles.

An Inquiry.—Any facts bearing on the culture and marketing of lemons are of great interest at the present time to those engaged in the lemon business, and I greatly regret that I could not have made a thorough canvas in person of the different localities growing lemons in southern California, and therefore written with more knowledge, before attempting this paper. All that I may say is only a little light on some of the perplexing questions of the profitability of lemon culture. I endeavored to get some information by sending out letters and asking particularly for the monthly yield through the year and the variety of lemon preferred, also the months giving best and poorest lemons, etc. So far as the information could be given me, I was very kindly answered, and got some interesting data.

The Time of Ripening.—It is pretty well known that in the interior, or where the climate is very warm, the yield of lemons is largely in the early winter months. This has been verified by the statistics sent me. From November to April, inclusive, one grower reports that 90 per cent of his crop is gathered; another that 88 per cent is gathered; another that 85 per cent is gathered in November, December and January. These are in the hot valleys. Then in the less warm sections I have seven reports, showing the yield to be in the months named from 57 to 68 per cent. In the cooler sections near the ocean I have a number of reports showing not over one-half of the lemons picked in the above months, viz., November to April. But in this respect California, as a whole, is even better off than Palermo, Italy. The British Consul, Dupuis, at that place, reports the average harvest there to be: In October, 14 per cent; November, 27; December, 23; January, 18; February, 9; total, 91 per cent in the five coldest months of the year.

It is not always the distance from the coast that determines the heat of the locality. The place may be near the coast and yet so hemmed in and protected from the ocean wind that the climate is very warm. The experience of most every one may have proved this. Go into a field where the corn stands from six to ten feet high and the heat will be tropical when the climate is delightful in the open.

The Best Sizes.—The reports upon the months giving the best sizes of lemons, which will include the best lemons I think, are of interest. All the reports outside of San Diego county, save one, agree that the best sizes are picked in November, December and January, and most of the reports include February, March and April also; but from this time most of the accounts agree in saying that many of the lemons color up too quickly, are undersized, especially so in the months of July, August, September and October. San Diego's account is somewhat different. One report names March as the best month and May for the poorest month for sizes of lemons. Another report says: "Sizes of lemons do not vary the year round. Except in exposed places after a cold 'snap,' for a few months, lemons will ripen smaller." The inference would be that the more equable and cool the climate the more summer lemons produced.

Winter Shipments Unprofitable.—The experience of last year shows that there was no profit in lemons sent East in the winter and early spring months—even if there is in the summer months. One problem to be solved, if it can be, is to successfully keep the autumn and winter picked lemons until the following summer, when there is a profitable market. Under favorable conditions, and with the best grade of fruit, I think this may be profitably done. I sent a car of fine lemons last winter to Chicago, with the request that they should be put in store for better prices than ruled at the time of shipment. After a few months the consignee advised selling because they were not keeping well. The result proved that I had better thrown them away before incurring any expense at all with them. I cannot think they had the right kind of storage. I occasionally set aside at random a box to test the keeping qualities. A box of 300's of my packing of Dec. 11, 1896, I kept until March 16, 1897, and then examined it, with the result of finding only one lemon rotten and all the rest in excellent condition. I think they would have kept well another three months. Last Sept. 10th I kept half a box of 360's of second grade and lost in three months, up to the 21st of December, 6 per cent. Probably a greater loss would have taken place in either case if these had been shipped away. If it is not feasible to keep winter-picked lemons until the following hot months of summer, then the cool sections that can gather half their lemons in the months of the best market would appear to have the advantage.

Soils for the Lemon.—Are all soils suitable for lemon culture? One lemon grower, who I thought had a model lemon orchard—trees large, pruned

well, bearing well, soil rich and well cultivated—wrote me that his lemons never paid him; that his lemons would not keep and that he did not believe a sandy soil suitable. He had been digging up his trees. This belief of the writer harmonizes to some extent with the reports of our Consuls at the different lemon ports of Sicily. Consul Jones at Messina, in his report on citrus fruits, says: "The soil has a great influence upon the maturing and keeping of the fruit. Fruit grown on a clay soil brings 30 per cent more than fruit grown on a sandy soil," etc. Notwithstanding this, I have had fine keeping lemons grown on sandy soil in Ventura county.

Classification of Lemons.—The Italians make a classification not known here, and I will quote further from Consul Jones, as follows: "Lemons are divided into two classes—the true lemon and the bastard lemon. The true lemon is produced by the April and May blooms; the bastard by the irregular bloom of February, March and June and July, which depends upon the rainfall or regular irrigation and the intensity of the heat during the summer and winter seasons. The true lemon requires nine months to reach maturity—from the bloom in May to the mature fruit in January. There are but three harvests of the true lemon. The first is the November cut, when the lemon is green in appearance and not fully ripe. Lemons of this cut are most highly prized. They possess remarkable keeping qualities, and are admirably preserved in boxes in warehouses from November until March, and sometimes as late as May, and then shipped. The second cut occurs in December and January. Lemons of the January cut must be shipped three weeks after gathering. At this date the lemon has acquired a yellowish appearance. The third cut occurs in March and April. The fruit is shipped as soon as gathered, spring prices being always high. This has not been the case in this country of late years. The uniformity in size of lemons, as we meet them in the trade, is due to the monthly harvesting from October to March. No size is used or even known here.

"Bastard lemons present well characterized peculiarities in shape and appearance. Their inner skin is fine and adheres tenaciously to the meat; they are hard, rich in acid and seedless. The bastard lemon produced from the bloom of June 1st is still green the following April and ripens only toward the end of July. The true lemon can be left on the tree until the end of May or the first week in June, but it interferes with the new crop, drops off from overmaturity, and is liable to be attacked by insects. The bastard lemons, on the contrary, withstand bad weather and parasite, and they mature from June to October.

"Have we lemons corresponding to the true and bastard lemons? Does any one know the time from blossom to mature fruit at different seasons of the year? I frankly confess ignorance on these points. The Italians have had much longer experience in growing lemons than lemon growers of California, and evidently have given closer study to lemon culture."

Best Variety of Lemons.—My personal knowledge is confined to the Eureka, Lisbon and Genoa. Near the coast I think there is very little choice between Eureka and Lisbon; but I gather from my correspondence that the best strain of the Villa Franca is preferred by some, who claim that it is nearly seedless and stands frost the best. This information is a surprise to me, for the specimens that I used to see exhibited a few years ago were not symmetrical and were full of seed, with a marked difference in the color of the two sides. Has the age of the trees obliterated these objectionable features? If not, there would seem to be two kinds of Villa Franca.

Can We Compete with the Italians?—Can we compete with the Italian growers in supplying the East with lemons? The "Fruit Trade Journal, Dairy and Produce Report" of Dec. 18th last, speaking of lemons, says: "We understand that the steamer freights from Sicily have been put down to the modest figure of 20 cents per box. At this rate of freight, and what is now paid to Uncle Sam, we are back to the figures of 1881 and 1882 for freights and duty, when California, by the way, did not interfere. This is very probable, for the steamship companies engaged in carrying lemons are interested in holding the markets of this country for the Italians; 20 cents freight plus 80 cents tariff are \$1. Our lemons, in standard boxes, are scheduled by the railroads at eighty-four pounds; freight is \$1.25 per cwt., making the freight per box \$1.05. Our labor is five times as much as the same class of labor in Sicily. It should be borne in mind that the labor, in preparing a box of lemons for shipment, is twice as much as the labor in preparing a box of oranges for shipment. Sicily is the great source of supply for lemons for the European and American markets. Consul Seymour at Palermo reports that for the year 1896 over half, or 52 per cent of the export of lemons from Sicily were to this country. Now, where outside of this country, are the Sicilians going to find a market for the half of their export that we have been taking? Even with the present tariff, they have a decided advantage in supplying the populous East with lemons. With these conditions to contend with, it is preposterous to think that we

are going to drive out of the Eastern markets the foreign lemons with the California product."

The Acreage in California.—On January of last year, as gathered from the reports of the county assessors and other sources, 231,515 lemon trees over four years old and 865,398 lemon trees in orchard form under four years old were planted—a total of 1,197,093 trees—nearly enough trees wisely planted and cared for to go far toward supplying the present market of the world with lemons. This remark may seem extravagant, but the facts justify the statement. This country consumes about 3,000,000 boxes of lemons. A small average of 2½ boxes per tree gives 2,992,745 boxes lemons—enough to supply this country—1,196,096 trees—and at five boxes per tree would produce 5,995,490 boxes—practically double the amount consumed in this country, and equal the entire export of Sicily for the year 1896. My old lemon trees have been giving me as much as five boxes per tree. I prophesy, however, that there will not be any increase of acreage of lemon orchards. Already many have commenced to bud their lemon trees into oranges, and others will do so or abandon the lemon culture.

Have Lemons Paid?—I question if a single shipper of lemons to the Eastern markets the past year has made a cent. I do not expect to see again the day when I can sell lemons in the orange box from \$4 to \$6 and \$7 per box in the markets of this coast. This I used to do, and the prices that lemons brought when the demand was beyond the supply created a lemon-planting boom. It is the old question of supply and demand, and the supply now is, and promises to be, more and more ahead of the demand at a price that will justify growing lemons at the present cost. A few lemon growers who had established a reputation and a market for their product on this coast have had, of course, an advantage in selling their product, but this advantage is each year being made less valuable by the flooding of the markets with scores of brands of all sorts of lemons. A lemon grower at Duarte writes that he became discouraged several years ago with a crop requiring so much care and labor; that he netted .33 of one per cent per pound for his crop of lemons from Nov. 1, 1896, to Nov. 1, 1897, which scarcely covered cost of picking, brushing, etc. If the railroads could carry our lemons East at half the present rate—say for 50 cents a box—then I think there would be a purpose to hold on on the part of many lemon growers who otherwise will be planning to get out of the lemon business. Unless relief from some source is afforded the lemon growers to enable them to put into the populous East the product of their orchards, there will be a great turning away from lemon culture.

A Lemon Institute Suggested.—I would be glad to unite with the lemon growers in calling an institute of all the lemon growers in the State to be held in Los Angeles, when we could take up all matters pertaining to the lemon industry.

The Orange Industry.

Extract from an Essay by E. W. HOLMES of Riverside at the University Farmers' Institute at Los Angeles.

What the Orange Costs.—Intelligent orchardists often admit that orange growing could be made to pay if one could be sure of an average price of 50 cents a box. I mistrust that such have never carefully figured out what it has actually cost them to produce the orange. One grower, and one that has made it pay in the past, admitted that if he added in interest at 6 per cent on his investment, his crop cost him nearly 70 cents per box. It is true that the year from which he took his figures was one in which he spent much in fumigation of his orchard, and also gave his place an extremely heavy fertilizing. But these are expenses that are inevitable.

I have taken pains to inquire the cost of running several fairly good orchards, and I find that, taking the average of several years' yield, the cost of production has come much nearer the sum received than the owners, without investigation of their books, would be ready to concede. The owner of a big orchard occasionally receives for his crop a sum that seems fabulous to the tenderfoot. But if the latter could know the cost of the investment before net dividends were forthcoming, and that before the interest on this is provided there are items of generous expenditure to be annually made which aggregate a total inconceivably larger than the inexperienced would imagine possible, he would conclude that orange growing is not quite so easy a way of making a fortune as he had imagined.

An Instance Cited.—Take a Navel orchard, as an illustration. It has borne many good crops, and has reached a condition when it must have heavy and regular fertilizing to maintain its productiveness. The average yield of Navel orchards is not over two and one-half boxes to the tree, which, netting in these good years \$1 50 per box, gives a gross income of \$375. That is, indeed, a handsome sum to obtain for an acre's crop. But let us inquire about what it has probably cost to produce it. Old orchards are

now requiring \$50 an acre annually for fertilizers to maintain them in high productive condition. Then there is the plowing and cultivating, the irrigating and pruning, the taxes and water rates, the picking and hauling of the fruit and other incidentals, not to mention the sometimes heavy expense of fumigating against insect enemies. These expenses often carry the cost to \$150 an acre. Now add \$60 as interest on capital invested—a low estimate—and your crop has cost you \$210. This leaves, indeed, a handsome margin to pay for care and superintendence if neither frost nor wind storm shall cut down the crop. But consider how small it will be when over-production shall make it impossible to obtain over 75 cents a box for the finest grades of the handsomest fruit in the world!

Is it Wise to Plant More?—Our present profits will inevitably tempt to future planting; but it is hoped that the day may be long deferred when my fears shall be realized as to excessive production. That such additional acreage as may be put in orchard shall be in the hands of those who come to make homes for themselves, rather than in those of the speculator, is earnestly to be hoped. It is our duty, however, to frankly give the dark side of the case, that those who engage in orange growing hereafter shall not be in ignorance of the truth.

At present the business is paying handsome dividends. But we shall be short-sighted, indeed, if we do not see what the future so clearly promises. Even with the mixed methods of marketing now endangering our profits, there need hardly be loss, so long as we have practically the whole American market to supply. But this it is idle to expect. Florida will be no insignificant factor within two or three years, and shipments of Mexican and Jamaica fruit increase yearly. But, if there is anything sure, it is that our rapidly maturing orchards will before ten years have passed alone furnish more citrus fruit than the country can consume, and this even though not another tree shall go into orchard in California. I do not make this assertion carelessly. You can study this problem for yourselves. Take the assessor's figures, and taking as a basis the average yield per tree of the past year, when the crop was below the normal, you will be forced to accept my conclusions that our present average will within the time named furnish for annual shipment 12,000,000 boxes, or 35,000 carloads of citrus fruits. Such a quantity of fruit could never be profitably marketed. As a result, the familiar experience of the raisin grower would be repeated on a larger scale in another department of horticulture. To lessen the danger which threatens the industry is not to ignore or conceal it.

How to Make the Business Solid.—We may not deny the present profitableness of orange and lemon growing. But we must realize that the present conditions are temporary, and by giving publicity to the facts of the possibilities of our present orchard area, stop the speculative tendency which may bring ruin to the majority of those engaged in orange growing. By a conservative policy alone can we hope to preserve the industry on a permanent paying basis.

If those who elect to join the ranks of the orange growers could occupy the vacant orchards of non-residents, and give to such property the close, careful attention success demands, the area of orchard would not be increased and the State benefited. There is room for thousands in this direction, and they can purchase such property to-day for a less sum than is required to create new orchards, and also gain in valuable time by so doing. The encouragement of this plan would interfere with the exploiting of new land speculations, but it would much better serve the good of this section and of the State.

THE VINEYARD.

Vine Pruning.

NUMBER 11.

By F. T. BIOLETTI, in Bulletin 119 of the Experiment Station of the University of California.

Short and Long Pruning.—The winter pruning of the vine consists in cutting off a certain amount of mature wood of the immediately preceding season's growth (canes), and occasionally of the older wood. The main problem of winter pruning, then, resolves itself into determining what and how much wood shall be left. In all kinds of pruning most of the canes are removed entirely. In short pruning the remainder are cut back to spurs of one, two and three eyes. The number of spurs is regulated by the vigor and age of the vine. This mode of pruning can be used only for varieties in which the eyes near the base of the cane are fruitful. For all other varieties long or half-long pruning is necessary.

In half-long pruning certain canes are left with from four to six eyes, according to the length of the internodes. These canes or fruit spurs will bear more fruit than short spurs, for three reasons: First, because there will be more fruit-bearing shoots; second, because the upper eyes are more fruitful than the lower; and, third, because a larger number of eyes being supplied with sap from the same arm, each shoot will be less vigorous and there-

fore more fruitful. Owing, however, to the tendency of the vine to expend the principal part of its vigor on the shoots farthest removed from the base of the canes, the lower eyes on the spurs will generally produce very feeble shoots. In order, then, to obtain spurs of sufficient vigor for the next year's crop it would be necessary to choose them near the ends of the long spurs of the previous year, if no others were left. This would result in a rapid and inconvenient elongation of the arms. In order to avoid this it is necessary to leave a spur of one or two eyes below each long fruiting spur—that is to say, nearer the trunk. These short wood spurs, having only one or two eyes, will produce vigorous canes for the following year, and the spurs which have borne fruit may be removed altogether, thus preventing an undue elongation of the arms. In half-pruning, however, it is very hard to retain the proper equilibrium between vigor and fruitfulness. If a little too much wood is left the shoots from the wood spurs will not develop sufficiently, and the next year we have to choose between small, undersized spurs near the trunk and spurs of proper size too far removed from the trunk. In long pruning this difficulty, as will be seen, is to a great extent avoided.

In long pruning the fruit spurs of half-long pruning are replaced by long fruit canes. These are left 2 or 3 feet long, or longer. The danger here that the vine will expend all its energies on the terminal buds of these long canes, and leave the eyes of the wood spurs undeveloped, is still greater than in half-long pruning. This difficulty is overcome by bending or twisting the fruit canes in some manner. This bending causes a certain amount of injury to the tissues of the canes, which tends to check the flow of sap towards their ends. The sap pressure thus increases in the lower buds and forces them out into strong shoots to be used for spurs for the next pruning. The bending has the further effect of diminishing the vigor of the shoots on the fruit canes and thus increasing their fruitfulness.

This principle of increase of fruitfulness by mechanical injury is very useful if properly understood and applied. It is a well-known fact that vines attacked by phylloxera or root rot will for one year bear an exceptionally large crop on account of the diminution of vigor caused by the injury to their roots. A vine also which has been mutilated by the removal of several large arms will often produce heavily the following year. In all these cases, however, the transient gain is more than counterbalanced by the permanent injury and loss. The proper application of the principle is to injure tissues only of those parts of the plant which it is intended to remove the next year (fruit canes), and thus increase fruitfulness without doing any permanent injury to the plant.

Pruning of Young Vines.—When a rooted vine is first planted it should be cut back to two eyes. If the growth is not very good the first season, all the canes but one should be removed at the first pruning, and that one left with two or three eyes, according to its strength. The next year, or the same year in the case of strong-growing vines in rich soil, the strongest cane should be left about 12 inches long and tied up to the stake. The next year two spurs may be left, of two or three eyes each. These spurs will determine the position of the head or place from which the arms of the vine spring. It is important, therefore, that they should be chosen at the right height from the ground. From 10 to 20 inches is about the right height—the lowest for dry hillside where there is no danger of frost, the highest for rich bottom lands where the vine will naturally grow large. Vines grown without stakes will have to be headed lower than this in order to make them support themselves. In the following few years the number of spurs should be increased gradually, care being taken to shape the vine properly and to maintain an equal balance of the arms.

In general, young vines are more vigorous than old, and tend more to send out shoots from basal and dormant buds. They should, therefore, be given more and longer spurs in proportion than older vines. They also tend to bud out very early in the spring, and are thus liable to be frost bitten. For this reason they are generally pruned late (March) in frosty locations. This protects them in two ways. In the first place, in unpruned vines the buds near the ends of the canes start first and relieve the sap pressure, and though these are caught by the frost the buds near the base, not having started, are saved. In the second place, the pruning being done when the sap is flowing there is a loss of sap from the cut ends of the spurs, which further relieves the sap pressure and retards the starting of the lower eyes. This method of preventing the injury of spring frosts by very late pruning has been tried with bearing vines, but is very injurious. Older vines, being less vigorous, are unable to withstand the heavy drain caused by the profuse beeding which ensues; and though no apparent damage may be done the first year, if the treatment is continued they may be completely ruined in three or four years.

Systems of Pruning.—The systems of pruning adapted to vineyards in California may be divided into six types, according to the form given to the

main body of the vine and the length of the spurs and fruiting canes.

A. Vine pruned to a head, with short stems. (1) With spurs of two or three eyes only (short pruning); (2) with spurs of one or two eyes and long fruit spurs of four to six eyes (half-long pruning); (3) with wood spurs of one or two eyes and long fruit canes (long pruning).

B. Vine with a long horizontal branch or continuation of the trunk. (4) With spurs of two or three eyes only (short pruning); (5) with wood spurs of one or two eyes and fruit spurs of four to six eyes (half-long pruning); (6) with wood spurs of one or two eyes and long fruit canes (long pruning).

These types are applicable to different varieties of vines, according to the natural stature of the vine—that is to say, whether it is a large or small grower and tends to make a large, extended trunk or a limited one. Second—To the position of the fruit buds. In some varieties all the buds of the canes are capable of producing fruitful shoots, while in others the one, two or three buds nearest the base produce only sterile shoots. Third—To the size of the individual bunches. It is necessary in order to obtain a full crop from a variety with small bunches to leave a larger number of eyes than is necessary in the case of varieties with large bunches.

What type or modification of a type shall be adopted in a particular instance depends both on the variety of vine and on the nature of the vineyard. A vine growing on a dry hillside must not be pruned the same as another vine of the same variety growing on rich bottom land. In general, vines on rich soil, where they tend to grow large and develop abundant vegetation, should be given plenty of room and allowed to spread themselves, and should be given plenty of fruiting buds in order to control their too strong inclination to "go to wood." Vines on poor soil, on the contrary, should be planted closer together and pruned shorter, or with fewer fruiting buds, in order to maintain their vigor.

Type I.—This is the ordinary short pruning practiced in 90 per cent of the vineyards of California, and is the simplest and least expensive manner of pruning the vine. It is, however, suited only to vines of small growth, which produce fruitful shoots from the lowest buds, and of which the bunches are large enough to admit of a full crop from the small number of buds which are left by this method. The chief objection to this method for heavily bearing vines is that the bunches are massed together in a way that favors rotting of the grapes and exposes the different bunches unequally to light and heat.

Fig. 4 represents the simplest form of this style of pruning. The vine should be given, as nearly as possible, the form of a goblet, slightly flattened in the direction of the rows. It is important that the vine be kept regular and with equally balanced arms. This is the chief difficulty of the method and calls for the exercise of some judgment. From the first the required form of the vine should be kept in view. On varieties with a trailing habit of growth vertical spurs must be chosen, and with some upright growers it will be found necessary to choose spurs nearer the horizontal.

The arms must be kept short for convenience of cultivation and to give them the requisite strength to support their crop without bending or breaking. For this reason the lowest of the two or three canes coming from last year's spur should be left.

In order to obtain the equilibrium of the arms it is often necessary to prune back the more vigorous arms severely in order to throw the strength of the vine into the weaker arms. If the vine appears too vigorous—that is, if it appears to be "going to wood" at the expense of the crop—two spurs may be left on some or all of the arms. This will cause the bulk of the fruit to be borne on the upper spur, and the most vigorous shoots to be developed on the lower, which provides the wood for the following year. This is an approach to the next (half-long) method of pruning.



HALF-LONG PRUNING.

Type II.—Vines which require more wood than can well be given by ordinary short pruning, or of which the lower eyes are not sufficiently productive, may in some cases be pruned in the manner illustrated in Fig. 5. For some varieties it is necessary to leave spurs of only three eyes, as at S; for others, short canes of four or five eyes must be left, as at CC. These shorter spurs can be left without support, but the longer ones require some arrangement to prevent their bending over with the weight of fruit and destroying the shape of the vine.

In some cases simply tying the ends of the canes together will support them fairly well, but it is better to attach them to a stake and bend them at the base a little when possible in order to retard the flow of sap to the ends. It is very necessary to leave strong spurs of one eye (not counting the basal eye) in order to provide wood for the following year. At the pruning following the one represented in the cut the fruiting part of the arms will be removed at KK and a new fruiting spur or cane made of the cane which comes from the eye on the wood spurs W. The basal bud on W will in all probability have produced a cane which can be cut back to one eye to furnish a new wood spur. If this is not the case it shows that too much wood was left on the first year, and, therefore, no fruit cane should be left on this arm, but only a single spur of two or three eyes. This will be a return to short pruning, and must be resorted to whenever the small size of the canes or the failure to produce replacing wood near the head of the vine shows that the vigor is diminishing. If, on the contrary, the arm shows an abundance of vigorous canes, proving that the vine has not overborne, a fruit cane may be left from one of the shoots coming from the lower buds of the fruit cane C, and a new wood spur of two eyes left on the shoot coming from the wood spur of the previous year (W). In this case the removal of the arm at K is deferred one year, and the extra vigor of the vine is made use of to produce an extra crop.

(To be Continued.)

The Raisin Business.

At the last meeting of the San Diego Horticultural Society the "Raisin Industry" was treated by R. C. Allen of Sweetwater. He showed, according to a report in the *Union*, that during ten years the output of this State has largely increased, while the acreage of southern California has materially decreased, owing to the ravages of the mysterious vine disease. This county has held its own. The output for the year for the State is about 70,000,000 pounds. By means of machinery some 10,000,000 pounds were seeded. He described the process of taking out the seed, which has now become quite an industry, and a growing one, as seeded raisins have the call on the markets. Speaking of cultivation, Mr. Allen recommended the muscat variety, a rich, deep soil in a location where the grapes would ripen early, summer pruning and irrigation early in the season. He said that California now had the markets of this country and the industry was a permanent one. A vineyard that will produce a ton of large, early raisins, Mr. Allen claimed, was a good piece of property.

THE DAIRY.

Value and Uses of Re-Acting Cows.

More moderate and conservative views concerning procedure to follow re-action by the tuberculin test are certainly gaining ground. It is becoming more and more clearly recognized that condemned cows have dairy value and uses, and however these facts may be related to the questions involved in city milk supply, there can be no question that in all lines of rural dairying they are significant and encouraging to all who have held that there is some rational method of proceeding without destroying hard-earned and intrinsically valuable property. This fact has been constantly insisted upon by dairymen and the best dairy experts, and we are pleased to bring encouragement and comfort to readers of the *RURAL PRESS* who have maintained this view.

Experiments in Wisconsin.—There have been recently concluded some experiments under the supervision of the Wisconsin Experiment Station which have yielded very important results. An outline is given in the last issue of *Hoard's Dairyman*, introduced by the following comments: "We are very glad to note that the scientists are calling a halt on the wild and reckless manner in which the tuberculosis question has been handled. It never seemed to us necessary or proper to condemn to death animals in apparently good condition, simply because they responded to the tuberculin test, thus indicating that somewhere—perhaps in no vital part—a few microscopical tubercles could be found. It is now demonstrated beyond a peradventure that sound offspring can be raised from tuberculous parents, and that tuberculous animals can be inexpensively kept apart and thus effectively prevent the further spread of the disease, even if it can not be cured." The experiments alluded to are reported by Prof. Russell of the Wisconsin University, and the details are very interesting.

The Trial Herd.—Two years ago a fine herd of Guernsey cattle came under our notice on account of the presence of tuberculosis in the same. Several animals had died from the disease, and when the

tuberculin test was applied sixteen out of twenty-three of the mature animals responded to the test, while the young stock, which had been kept separately, were all healthy.

Inasmuch as no physical symptoms of the disease could be detected in some of the animals it was decided not to slaughter all those that re-acted, but to isolate the affected from the healthy part of the herd and by good hygienic measures see if the progress of the disease could not be arrested. Moreover, the incipiently diseased stock was to be used with care for breeding purposes, the progeny being separated from their mothers at birth and fed on boiled or pasteurized milk. In this way it was hoped that the herd might be gradually built up again on a perfectly healthy basis without losing the valuable qualities of some of the pure-bred stock.

Isolating the Re-Actors.—After the herd was tested with the above results it was divided on the basis of the re-action to the test. The barn, which was a basement structure, was thoroughly disinfected and a board partition thrown across the stable to separate the two sections. The respective sections were pastured in separate paddocks, watered in separate receptacles, and kept entirely apart as two distinct herds. During the winter the animals were given daily exercise in the yard except in the worst of weather.

Twice a year the herd has been subjected to the tuberculin test and at more frequent intervals inspected physically to determine the progress of the disease. None of the animals showed any discoverable udder lesions at the time the herd came under our notice. In order to remove from the affected section the possibility of continuous infection from those animals having the disease in an advanced form, all of those that showed pronounced physical symptoms were killed.

Results.—Briefly summarized the results of this work for the past two years that has been carried out on the farm of the owner under ordinary conditions are as follows:

Condition of original herd January 1, 1896:
Of twenty-three adult animals sixteen re-acted.
Of ten young stock none re-acted.
Calves dropped in 1896 from affected herd, fourteen.
None re-acted to test.
Calves dropped in 1897 from affected herd, ten.
None re-acted to test.
All calves from healthy herd gave no re-action to test.

Of originally affected animals, all now alive (ten) still re-act.

Of originally healthy animals none now re-act, showing that spread of disease was checked.

Conclusions.—From the above summary it is evident:

1. That it is possible to raise a healthy calf from a tuberculous parent, and thus preserve in the progeny the valuable qualities of any animal.
2. It is possible to check the further spread of the disease by separating the reacting from the non-reacting animals.
3. Moreover, the affected herd shows, on the whole, considerable physical improvement, although all of the originally affected animals still react to the test. Six of the sixteen have been killed for experimental purposes—four of these removed on account of the advanced condition of the disease—but of the remaining twelve only two have become worse during the past year. This signifies that frequently the disease will remain apparently latent for a considerable period, if the animal is not continuously subjected to reinfection by being kept in quarters with badly diseased animals, that undoubtedly serve as centers for the distribution of the disease.
4. No apparent bad effect has been produced in any of the animals by the semi-annual introduction of tuberculin into their systems. On the whole, the reaction fevers are somewhat lower than they were originally, but they are in all cases still marked.

Continuation of Experiments by the Experiment Station.—The herd has now reached such proportions that the owner is forced, for lack of room, to dispose of some of his stock. Undoubtedly, the animals could be used for meat, if the disease, upon post-mortem examination, was found to be confined entirely to the internal organs, and the lesions were not severe in character, but the Wisconsin Agricultural Experiment Station, realizing the importance of continuing these studies on a tuberculous herd, especially since the same herd has been under our supervision for the past two years, has secured the affected herd and will continue the work already inaugurated.

These animals will be removed to a farm in the county owned by the station, and there kept isolated from all other animals. Breeding experiments will be continued as before, but the main purpose is to determine if the disease can be held in check, and, if so, for how long. Study will also be made of the milk of such animals to determine if it is infectious. The milk supply derived from the herd will not be used in the ordinary manner, but will be utilized for purely experimental work.

We believe that the information gained in this work will be of the greatest value to the dairy inter-

ests of the State. Much opposition has been developed to the use of the tuberculin test, because it has been customary to destroy all re-acting animals, whatever their condition. Such a procedure often works a hardship, and it is not surprising that breeders who have been at great pains and expense to build up a fine herd, antagonize the use of the test. The present method of treatment of re-acting animals, however, does away with the only reasonable objection that has ever been urged against the test.

This Line of Procedure Approved in Europe.—This same method has been tried in other sections, notably in Denmark, where Prof. Bang has experimented, with equally favorable results, on a number of herds.

Bovine tuberculosis, where it is not subjected to control, is gradually on the increase. This cannot well be helped, when we consider how often the disease is introduced into new herds by the purchase of an animal that is tuberculous, but which at time of purchase may show no visible symptoms of the disease. The report of the Minister of Agriculture, concerning statistics compiled from the records of the Government abattoirs in Prussia for the year 1895, show the following interesting data:

| | |
|----------------------------|--------------------------|
| Cattle slaughtered in 1895 | 1,662,164 |
| No. tuberculous in 1895 | 81,183, or 4.87 per cent |
| No. tuberculous in 1891 | 10,69 per cent |
| No. tuberculous in 1893 | 8.9 per cent |
| No. tuberculous in 1892 | 8.6 per cent |

Moreover, this report also shows that the disease is spreading relatively faster in those sections where it had already obtained a firm foothold. Collected, as these statistics are, for Government purposes, and not to bolster up some preconceived notion, it does seem as if they were entitled to more than passing consideration.

Popular Feeling.—The past four or five years has witnessed a great awakening in regard to this matter, in all of its relations. Many exaggerated and unwarranted statements have been made, particularly with reference to the actual danger that exists in relation to the infectiousness of milk under normal commercial conditions, but there is no gain-saying the fact that the question of bovine tuberculosis, as it is presented to the breeder and the dairyman, independent of its sanitary aspect, is one of supreme importance. If the hygienic phase of the question has been over estimated and exaggerated, the economic point of view is blindly ignored by many.

Experiments in New Jersey.—John Gould, the well known Ohio dairy expert, gives *Hoard's Dairyman* a sketch of the work in New Jersey: One thing at the New Jersey Station interested me greatly, and that was Prof. Vorhees' sanitarium for tuberculous cows, where experiments are being conducted with some—now—eight cows, to see what facts can be found out respecting the disease by close attention and tests. The experiment has gone on two years, and some points have been ascertained. The stable is an isolated one, and the experiment commenced with about eleven cows, all "suspects" but one, and she a healthy one, the aim being to see if she would contract the disease by contact. She eats out of the same mangers with the others, drinks out of the same basins, and is shifted about so that she is "roomed" between different cows. The result is that after two years, she is as healthy as ever, and milks right up to the notch all the time. The cows are injected with tuberculin now and then, and its effects watched. The well cow has been injected fifteen times, and has never shown by sign or symptom that she is effected one way or the other. One cow, with a cough and symptoms of "something," fails to respond to the tests, but another cow that was "bad" by all tests was killed, and not a sign of tuberculosis was found, and another only had a few incysted "lumps" not larger than pin heads, and these in the liver.

Whether the tuberculin effected a cure is a matter of conjecture. Another cow killed "on trial" was found to have a sound liver and lungs, but the heart was being absorbed by some action, and was of very small size. The balance left—all Holsteins—are being fed and cared for the same as the other herd, the same food, and the milk is pasteurized and sold. With one exception the tuberculin now fails to cause a rise in temperature, and the herd may be said to now be "immune." They are now to have a five months rest, and then they will again be tested. Just now it looks as if the tests had not proven all that could be desired, as an agent in detecting the disease, though in the herd slaughtered some two years since the tuberculin test was wonderfully accurate in detecting the disease. This herd seems to be in excellent health, save one cow that has somewhat of a cough, and she—beyond looking a little thin—has no looks which would indicate that she was trembling on the ragged edge of science. Of course, the only way now seems to be to kill these cows, one by one, to ascertain whether or not tuberculin has curative effects, or whether repeated trials produce a condition of the cow which causes non response, even if tubercles are present. The whole experiment is full of interest and is in the end to be a wonderful help to one side or the other in this pro and con of the tuberculosis question.

METEOROLOGICAL.

Mr. Blochman Answers Questions.

TO THE EDITOR:—Could you get Mr. Blochman, in his interesting and timely weather discussions, to explain why it is that this year (contrary to all precedent) the rainfall in the south has increased toward the south. While I have no tables at hand, I think so far the rain has in each case since September, '97, been equal or greater south of Los Angeles than in this city, and in several cases this excess has been noticeable. In an October rain, for example, I found a fall of 1½ inches at a point thirty miles south of Ensenada, L. C., which decreased to half an inch fifteen miles south of Ensenada and to little more than a trace at Los Angeles. The usual difference has not been so much, but still would be a third more in each storm, for a southing of 200 miles. Of course the usual rainfall would be just the reverse, being for Los Angeles considerably greater than for San Diego or Ensenada, L. C.

HACIENDA.

Los Angeles.

TO THE EDITOR:—The question of "Hacienda" is a very good one, and substantiates certain observations of the southing tendencies of storm areas in recent years. In the '60's and '70's no such tendencies occurred. In the last two decades they have increased, and with it the whole rainfall of southern California has decidedly increased. And this fact alone is one reason that actual dry seasons are becoming more and more improbable. Even the summer weather has materially changed for southern California. In the geography I studied in 1870 it said that "summer fogs below Point Conception were rare;" old Los Angeles settlers also remark the same thing. But of recent years the fogs and damp coast winds have steadily increased southward, and with it has come an increased average rainfall. The dry year of '76-'77 was preceded by a summer of the least amount of fog and coast breezes of any year since; this season has had its normal amount of the ocean's summer movement, so its winter precipitation should follow not much below normal, even if it comes somewhat belated. This year's December acted very much like that of two years before, both as regards rainfall, winds, currents and clouds. In January it began to differ. The first storm entered at San Diego and southward, the storm area either southing way out on the ocean, or else, as might be probable, the storms that strike in on the Mexican coast (at the Gulf of California) took an unusual northerly trend. I am not prepared to answer, as I have no exact dates to compare and see whether any storms entered on the northern coast at the same time. But at a point in Lower California, as far south as Ensenada during the month of October, the gulf storms prevail and could, under a low pressure at Ensenada, be deflected northward, with decreasing rains at San Diego, and still less at Los Angeles. These are not the usual conditions; most of our rains on the coast come by deflection from northern storms. Occasionally the storm areas break at sea and a portion strikes in direct off our coast, and is the rarer occasion of our having heavier rains than up north, near the usual track of the storm.

The Season's Probabilities.—In my close observations of numerous seasons I have frequently been asked for an opinion of this season. I have typified it as one of belated rains and not as a dry season. Present indications do not show any very immediate change from the set dry and cold conditions; both barometer and clouds point the wrong way for rain; that high and dry air of Nevada and Utah has not bulged much. But eventually, when a storm area of great intensity strikes in along the northern coast, it will move this dry belt, and as the atmosphere is now growing damp and the cold is making conditions for precipitation more favorable I anticipate very heavy rains early in February. These are the sum of probabilities adduced from similar conditions in other years. If the weather keeps up its latent humidity, as this one is doing, after the lapse of long dry spells rains come with increased intensity.

L. E. BLOCHMAN.

Santa Maria, Cal., Jan. 19, '97.

Confessions of a Weather Prophet.

Much comfort may be gained from the statement made by Mr. E. W. Maslin at the last meeting of the State Board of Trade. Not only are good chances shown for this year, but the danger of specific prophecy is displayed in the humble confession which Mr. Maslin makes of his own sins in the line of weather prophecy:

In forty-eight seasons there have fallen 960.81 inches of rain, an average for each season of 20.01 inches. The total precipitation before Jan. 1 of the seasons was 480.15 inches, an average of 7.82 inches. This season's fall before Jan. 1st was below the average, being only 4.07 inches. This is no cause for alarm. A glance at the table shows that there have been thirteen seasons in which sufficient rain fell to

mature crops, but in which less than 4.10 inches of rain fell before Jan. 1st of the season.

I once thought that I had discovered the law of storms in the State. In 1880 I began to pay attention to meteorology, as I was about to engage in horticulture. In 1850-'51 the season's rainfall was 4.71. Counting therefrom, the sixth season—1856-'57—brought 10.56 inches. The seventh season thereafter—1863-'64—brought 7.87 inches. The next seventh season—1870-'71—brought 8.47 inches. The next sixth season—1876-'77—brought 8.96 inches. In the seventh season thereafter—1883-'84—before Jan. 1, 1884, there only fell 2.92 inches. About this time I received some data from General Bidwell which showed that the season of 1843-'44 was an extremely dry season. Counting from that period, there were seven seasons to the next dry season—1850-'51. I concluded that every sixth or seventh season there would be a drought. I prophesied. I wrote for the Placer papers, and warned my fellow fruit growers not to put out any trees and vines.

Alas for my reputation! There fell that season 24.78 inches of rain, distributed as follows: Before January 1, 1883, 2.92 inches; January, 3.43 inches; February, 4.46; March, 8.14; April, 4.32; May, 0.6; June, 1.45 inches. Still I was not willing to surrender. I conceived that the law might be a dry spell every thirteen years or thereabout. Accordingly, when before January, 1888, which was of the eleventh season after 1876-'77, there fell only 2.04 inches of rain I felt sure of my law. It is true that only 11.56 inches fell, but the precipitation was attributed thus: March, 3.04; April, 0.10; May, 0.06; June, 0.8. Notwithstanding the small amount of rain, the fruit crop of 1888 was a very fair one.

The point that I desire to make is that we have have not discovered the law of deficiency, and that because only 4.07 inches of rain have fallen before Jan. 1 of this season, there is necessarily no cause for alarm, seeing we have had thirteen seasons before in which less rain fell before Jan. 1, and in each of these seasons there were good crops. In fact, we had only four bad seasons—1850-'51, 1863-'64, 1870-'71, 1876-'77—in forty-eight years, and, except 1850-'51, something was raised in each season.

THE POULTRY YARD.

The Limber-Neck Disease.

This is a peculiar disease with a striking name and region. We have never seen it, and, according to the *Poultry Keeper*, nearly all complaints come from Kentucky and Tennessee. The question is: What is it and the cause? Nearly all who have expressed an opinion admitted one point, which was that the fowls had eaten maggots from carcasses of animals.

Mr. R. H. Porter, Nashville, Tenn., writes in regard to the matter as follows: "I have an absolutely sure cure for limber-neck, which is caused by the fowls eating maggots. Give a teaspoonful of sugar, dissolved in a wineglass of water, to three or four fowls, using a medicine dropper."

In the above Mr. Porter attributes the difficulty to eating maggots, and finds sugar a remedy. Mrs. R. H. Bell, a breeder of pure-bred fowls, Knoxville, Tenn., gives her views as follows: "It is termed 'limber-neck' here, but I do not think it is really a disease, as it is not contagious, though it kills all ages, and of both sexes. I have known hens to lay an egg or two after becoming sick. Some live three or four days, some have no use of their legs, and become blind or helpless, the neck being stretched out as limber as a dishrag. I have been raising pure breeds for six years, and have had experience with the difficulty for several seasons. It is the same illness that is known as 'crop-worms,' caused by eating maggots or worms from dead chickens or other sources. I have opened fowls after death and found the crops full of maggots. The maggots are alive, but, if taken in time, before the maggots have eaten through the crop lining, the birds may be saved, my remedy being half a teaspoonful of kerosene and six drops of turpentine, though clear lard will do as well. On the first signs of the trouble shut up all the fowls and search for the dead animal or other source of maggots."

Still another witness may be cited, it being Mr. H. B. Greer, Nashville, in *The Epitome*, who confirms the above, as follows: "There is a disease that comes in the autumn that carries off the chickens, young and old, and will keep it up sometimes until all are gone. It is what we call limber-neck in the South, and we suspect very strongly that it was the cholera of the olden times. It is nothing more nor less than the natural result of carelessness and impurity combined. It comes of the chickens eating the maggots contained in dead animal matter lying about on the surface of the ground in some fence corner or other out-of-the-way place, and it will kill the chickens just as long as a new one comes along and is contaminated by it. Why chickens should peck, scratch about and eat the maggots in such stuff we do not know; but we do know that they will do it, and that it will kill them, too. So if disease comes along now, and the chickens begin to die sud-

denly and mysteriously, go and make a search for the cause of the disease and bury it. Bury all the chickens that die, too. Suffer nothing dead to lie unburied on the premises." The other fowls, ducks, turkeys, etc., are not exempt.

Glorifying the Hen.

Galen Wilson, in *Farm and Fireside*, requested an old crippled soldier engaged in poultry raising to give his views, and received the following: "Eggs are always cash. They are ready for market the minute laid, and the sooner they are got to market the better. They require no cultivation, pruning or harvesting, but are at once in salable condition. With plenty of eggs on the farm there are a host of good things in the kitchen and money in the family purse. Gathering up eggs is like picking up dimes and dollars. Great is the hen that produces them. When everything is dull in winter, the egg basket has wonderfully helped out many a poor farmer. The crops may be poor, the provisions low, the family cow dry, with a long wait for the next growing season, but the hen comes up smiling, and is ready to get a pound of tea or a sack of flour. If treated well, she will respond as readily when the snow is on the ground as when the fields are green. She is a friend to the rich and poor alike."

FRUIT MARKETING.

California Prunes in Germany.

TO THE EDITOR:—The production of fruit is becoming so large in this State that any new markets are worthy of the greatest attention. Germany has consumed in the last year or so an appreciable quantity of our dried fruits, and in so far has undoubtedly helped the situation, such as it is. Germany is one of the easiest markets in which our fruits may obtain a firm footing. The duty is inconsiderable and the freight not prohibitive, while much of north Germany is bare of fruit within the means of the poorer classes. Our prunes are preferred to the French, and command higher prices than the Dalmatian, etc.

However, this market is threatened. The German horticulturist, alarmed at the rapid spread of our fruit, is agitating against it. At present, the agriculturist in Germany is quite an important political factor. Where against the American hog he used the war cry of "trichinae," he is now using against our fruit that of "San Jose scale."

We, of course, know that the argument is foolish; but unless the matter is brought strongly before the proper authorities in Germany, there seems little doubt that our fruit will, even if it be not prohibited, have a high duty placed on it, and its market among the poorer classes closed.

Governments, of course, are peculiar things, and may be pleased to believe that the San Jose scale, if even on the fruit, is, after being dipped in boiling water and lye, as cheerful as a cricket; but the effort to convince them to the contrary is worth trying. Could not our Horticultural Commissioners make an attempt in this direction?

J. K.

San Jose.

[We should say so, by all means. It could be very effectively done through Secretary Wilson, of the United States Department of Agriculture. The entomologists of the Department know all about the San Jose scale; they know that it is disappearing from California orchards, and that even where it exists still on the tree, neither the scale nor its vestiges can remain upon properly processed prunes. Probably Secretary Wilson could give assurance on this point which would satisfy the German Government.—Ed.]

Information Wanted.

TO THE EDITOR:—At the request of the Fruit Growers' Convention, held at Sacramento last November, I undertook to write some account of the present aspect of horticulture in California, more especially with reference to its commercial side. The intention was to collate facts as to any hardships and grievances relating to the transportation, refrigeration and marketing of California products, and to suggest remedies. I requested those who had suffered such hardships and endured such grievances to send me written statements giving me all definite information, so that I might have a verifiable basis for any assertions I might formulate as to present troubles. Thus far no one has furnished me the needed material, so that I have nothing to work upon, save my own experience and those published during the convention.

To the end that I may fulfill my promise, I ask all fruit growers interested to send me data to work upon.

EDW. BERWICK.

Pacific Grove, Cal.

THE HOME CIRCLE.

Some Day.

Last night, my darling, as you slept,
I thought I heard you sigh,
And to your little crib I crept
And watched a space thereby;
And then I stooped and kissed your brow,
For, oh! I love you so!
You are too young to know it now,
But some time you shall know.

Some time, when in a darken'd place,
Where others come to weep,
Your eyes shall look upon a face
Calm in eternal sleep;
The voiceless lips, the wrinkled brow,
The patient smile shall show—
You are too young to know it now,
But some time you shall know.

Look backward, then, into the years
And see me here to-night—
See, oh, my darling, how my tears
Are falling as I write—
And feel once more upon your brow
The kiss of long ago—
You are too young to know it now,
But some time you shall know.

—Eugene Field.

Ned Moxon's Grievances

BY REBECCA HARDING DAVIS.

Alice Weedon, after a short visit to Plympton, became engaged to Edward Moxon, of that place, and a few months later married him. All of her friends rejoiced in her good fortune. Mr. Moxon was one of the most influential men in Plympton. He was a man of high integrity and scholarly tastes; he was young, singularly handsome, gentle and honorable; in a word, a Christian gentleman. He had inherited the family homestead, a large mansion in the midst of the great estate, and he spared no pains nor cost now in fitting and decorating it, being resolved that everything in her new home should tell his wife of his love and care.

People in Plympton said to each other, significantly: "Now, surely Ned Moxon will at least be a happy man!"

But on the morning of the wedding day, while the sun was shining, and Alice in her white robes, her blue eyes beaming with love, came to meet him, his brow suddenly grew black. He pointed to the wedding presents.

"The Scotts in Plympton, I see, have sent you a miserable pair of sugar tongs. Now, what can that mean? The Scotts are among the nearest friends; they know how much I have done to serve them. Did you observe these sugar tongs, Alice? Cheap and light weight! Picked up at some auction, no doubt!"

"Dear Edward, what does it matter? What do we care for sugar tongs today?"

"I hope, Alice," he said, gravely, "that you do not suppose I care for the sugar tongs? It is the affection which they represent, or rather, do not represent. The Scotts have been very dear to me. There is something underneath this which I do not understand."

"Do not let us think of it now," said Alice.

The guests were gathering in the parlor below; the minister had come. She trembled and grew pale, while her sisters, sobbing and laughing, arranged her veil, Edward soothed her tenderly. He was quite alive to the imminence of the moment. But just before they went down he drew her aside and said: "You wronged me, Alice, in supposing that I cared for the sugar tongs as sugar tongs. They express to me a lack of friendship where I have a right to expect it. And your mistake shows a lack of confidence in me which—"

"Oh, Edward, you are not angry with me now?" she cried.

"Not angry," he said, in a tone of patient suffering, "but hurt. Come, dear, they are waiting."

Alice remembered with shame ever afterward that the words of the holy rite were mingled in her mind with the Scotts and sugar tongs.

On their wedding journey they visited New York and Boston, where they were welcomed by hosts of friends, who told each other that Ned's cup of happiness was full. He, himself, was sure of it. Alice grew more lovely and near

to his soul each day. But the affair of the sugar tongs rankled in his mind.

"You wronged me, Alice," he told her. "How could you suppose that I cared for the money value of the wretched things?"

"I never did, Edward!" she protested, with tears. "Never!"

"Well, well, let us dismiss the subject. Why do you cry? It is not you who have suffered injustice."

"How can you be angry at such a paltry thing?" she exclaimed, indignantly.

"Angry? You wrong me again. I am only hurt. You do not apparently understand my character at all, Alice, dear. We will speak no more of it."

But the next day and the next the Scott sugar tongs were brought up afresh, and the same weary round was traveled over again.

There were other grievances. In Boston the Purdys did not call upon Alice for two days. They, too, were his dear friends, and the neglect "showed a lack of affection at which he was not angry, but hurt." At Niagara an overcharge in the hotel bill made him blind to the grandeur of the falls, the tawdry colored lights and the oddities of the little town, all of which gave Alice such keen enjoyment.

"Don't think of it, Edward," she said. "It was only 50 cents, after all."

"Is it possible, Alice, that you think I care for the money? It is the fact that I have been overreached which annoys me."

"I know. But—"

"No, you do not know," he said, with an air of stern endurance. "You think me mercenary. I am sorry. Let us talk no more of it."

Alice, at first, tried to laugh away these grim and ugly suspicions in her husband's brain; but that only made their growth more rank. "I am not a sensitive man," he would say. "I am not apt to imagine slights. But when I am wounded to the quick by your injustice, your misconception of me, it is hard to hear you turn me into ridicule."

She tried then to argue him out of his morbid fancies, but this was impossible. Concerning the tariff, or the last discovery in science, or a new book, nobody could be more rational than Ned Moxon; but no reason, no argument could touch his grievances.

It seemed to her that he gloated over them. He woke her in the night to tell her of his deep affection for her or his friends and of the ingratitude with which he was repaid. Every careless word or trifling neglect was a black proof of that ingratitude.

Going up the Saguenay, Alice met on the boat her old friend, Fraulein B., and the two girls chattered together for an hour on deck, while Moxon, with a heavy brow, paced up and down.

"You know," he said afterward, "that I do not speak German. It is the lack of consideration of me that hurts me."

"But she cannot speak English, and—"

"Pray do not explain. It is a trifle. These things sting, however. We will talk no more about it."

For two days of their homeward journey he held her aloof with the most chilly courtesy, sitting silent by her side, staring out of the car window with the face of a martyr. She found out at last that a button was wanting on his glove.

"No, I did not tell you," he said, with a patient, injured smile. "Love has keen eyes for these little services. Ah, I wonder sometimes if you ever loved me, dear—if it was not respect—esteem—you gave me."

"And all this," thought the tortured Alice, "to grow out of a button!"

But she now neither joked nor argued with him.

All Plympton, when they arrived, watched them curiously. They knew Ned and his grievances. "She has sound sense and fine tact, and she loves him dearly," the older women said. "She will cure him, if anybody."

Her first effort at cure was to make their home bright and cheerful, in hopes that the innocent gaiety might drive

away his moody suspicions. But he became more melancholy each day, telling her at last with a sad patience:

"I do not like company. I had thought our life would be a long, happy tete-a-tete in our home."

"I am so sorry, Edward," she cried. "I only brought these people here to amuse you."

When the house was empty she bade no more guests. Then Edward grew more wretched than before.

"This is unkind of you, Alice. You condemn yourself to solitude to please me as if I were a tyrant and an ogre. I exact no such a sacrifice. You are placing me in a false position."

If Mr. Moxon had been a wicked or malignant man his wife would probably not have found this trait so difficult to deal with. It would have been in harmony with his whole character. But he was an affectionate, generous fellow, showering kindnesses upon his family, his friends and the poor. He was a liberal, public-spirited citizen; he took the delight of a boy in picnics, fishing parties or any other gaiety among the young people. It is true that at each one some sting was given to what he called his affections, but what really was his self-love, and these stings festered in his mind for years.

"Ned," one of his cousins said to Alice, "is the most lovable fellow in the world; yet he has a grudge against every family in Plympton."

As the time passed and children began to grow up around them, the strain upon their mother became almost intolerable. Edward loved his children passionately; he heaped luxuries upon them; secretly he believed them superior to all other human beings; but he nagged them incessantly, and each of their petty faults he received as a personal insult and injury to himself.

"Tom," he would exclaim, with a face of despair, "is biting his nails again! I have spoken to him about it a thousand times. It is open defiance! That boy despises me, and he shows it!" Or, "Rosa writes a wretched hand. She knows how ambitious I am that she should excel in penmanship. She has no affection for me, Alice, none whatever!"

It was in vain that his wife represented that all children were fallible, or begged him to let time and patience do their work.

"No; I make every sacrifice for them. If they loved me, they would not pain me in this way," he would reply, with real agony of soul, when Rosa failed in her geography, or Bob came home bedaubed with mud.

Alice, beyond other women, possessed sound sense and a sweet, joyous temper; but, as she neared middle age, her friends wondered why, blessed as she was with wealth, good, loving children, and a husband whom his church party and State honored, she would have the jaded, watchful face of one who has had a long struggle with disease or disgrace.

Bob, who was a fiery, excitable lad, understood the meaning of her look.

"Poor mother!" he said, one day after he came home from college, taking her head into his arms. "It would be easier to fight with wild beasts at Ephesus than to keep guard over my father's temper and mine. But I will make an end of it, soon."

"What do you mean, Robert?"

"Tom and I are going away, mother."

"Your father means you to study law and medicine at home," she gasped.

"I know; but, mother, if we stay there will be an open rupture. Father takes every difference of character or opinion as a personal insult. We are not as patient as you. Let us go to California and shift for ourselves. We are no longer children, we are men."

"It will be better in the end," pleaded Tom. "He will love us better out of sight."

"How will you break it to him?" sobbed Alice. "It will kill him to think that his temper has driven you from him."

"He need never know it," said Bob.

"I will only show him the business side of the matter." He went out to find his father.

But Edward guessed the truth. An

hour later his wife found him sitting alone. His features were drawn and sharpened with sudden age.

"Alice," he said, "the boys want to leave us. I feel that they are alienated from—me. I fear I have been too stern with them." She did not answer.

"You think I have been too stern?"

"No, Edward." Alice could hold her peace for a lifetime; but if forced to speak she would not bridge the gulf with little lies. "You have not been stern, but exacting and fretful."

He was silent, never having received such a blow. "To you?" he said, in a low voice. "You have found it hard to bear?"

"Sometimes, my husband." She went up to him and put her arms about him, but he gently pushed her aside.

"I would rather be alone. I exacting and fretful!"

He had always felt that he was dealing love as largesse about him, receiving poor return; and he had been the suspicious, unreasonable tyrant, making home intolerable! He had never seen this face in the mirror before, but he knew it was his own.

"Ask the boys to defer their preparations," he said to his wife. "I will talk it over with them when I can think clearly."

But they never talked it over.

Mr. Moxon had been tempted to invest heavily in a mining speculation. The news of its failure came to him that day. He read the telegram aloud and laid it down.

"Are you deeply involved in it, Edward?" his wife asked.

"Yes. If this be true we shall lose everything—stocks, land and house. I am an old man to begin the world again."

"Why, father!" Bob sprang from his chair and ran to him. "We'll begin it together—you and Tom and I. Three boys! We'll go to California and start afresh."

Tom had his arm about the other shoulder. Edward looked up at them and at his wife who was kneeling at his feet. He laughed, but the tears came.

"Please God, it may not be as bad as we think; but if it is, boys, I'm ready."

It was even worse than they thought. When business was settled there was a bare pittance left, hardly enough to take the family to California.

But through these dreary days it was noticeable that not a word of complaint came from Ned Moxon's lips. The man in him rose to face this real disaster. He was hearty, cheerful, courageous. Every day he came to Alice to tell her of some new proof of kindness from his friends, who crowded about him in this dark hour.

"But it is the boys who will carry us through!" he said with triumph. "They stand by me shoulder to shoulder. They have heads for business such as I never had, Alice."

The Moxons, father and sons, have had a hard fight for success in California. For years they marched together over a bare space in life, facing poverty and even want. Edward Moxon knew that it was his own folly which had brought his wife and children into these straits, and he worked with desperate energy to protect them from hardships. All the strength and tenderness of his character came out; the aggrieved whine never was now heard in his voice.

"I wonder," said Rob one day to his mother, "how I ever could have thought father ill-tempered. He bears the worst troubles with such large, calm good humor."

That evening Rosa, putting her sugar in her tea, balanced the tongs on her fingers. "Light weight, mamma! Where did they come from?"

Her father frowned. "They came from a man," he said, "who in the time of my trouble offered to back me with money to any amount. If you notice every disagreeable trifle, Rosa, you will make life a burden."

Then Alice felt that her husband's cure was complete.

But there are so many Ned Moxons in the world! So many wives and

children are crushed under their many virtues and their single fault!

Is there no cure for them but bankruptcy or death?

Curious Facts.

It is said that some of the Venetians—those who have never been to the mainland—have never seen a horse in all their lives. A showman once brought one to a fair and called it a monster, and the factory hands paid a shilling each to see the marvel.

The Dutch are the largest consumers of tobacco. In 1883 the consumption in Holland and Belgium was eighty-four ounces to each inhabitant. Next comes Switzerland with eighty-two. Brazil and Turkey follow with seventy ounces each per Brazilian and per Turk.

The crown of England is kept in the Tower of London, and not in the Queen's dressing room. It is never brought out excepting on grand state occasions, but whenever a ceremony such as a drawing room or levee takes place the Queen wears a circlet of diamonds in the form of a crown on her head.

"Pig iron" is a mere play upon the word "sow." When iron is melted it runs off into a channel called a sow, the lateral branches of which are called the pigs. Here the iron cools, and is called pig iron. Sow has nothing to do with swine, but is from the Saxon "sawan"—to scatter.

Flour compressed into bricks by hydraulic pressure, the material occupying only a third as much space as the loose flour, is being tested for army and navy use. Results thus far appear to show that the treated flour is quite unaffected by dampness and is free from mould and safe from the attacks of insects. Unlike loose flour, it may be safely stored for a long time.

The smallest inhabited island in the world is that on which the Eddystone Lighthouse stands. At low water it is thirty feet in diameter at high water the lighthouse, whose diameter at the base is twenty-eight and three-quarter feet, completely covers it. It is inhabited by three persons. It lies nine miles off the Cornish coast, and fourteen miles southwest of Plymouth Breakwater.

Popular Science.

A full-grown man exhales 17 ounces of carbonic acid gas every twenty-four hours.

The difference between the tallest and shortest races in the world is 1 foot 4½ inches and the average height is 5 feet 5½ inches.

Singers, actors and public speakers, since the introduction of the electric light, have less trouble with their voices, and are less likely to catch cold, their throats are not so parched, and they feel better. This is due to the air not being vitiated and the temperature more even.

To the average eye not more than five thousand stars are visible. Some persons having extraordinary strong eyes can see about eight thousand stars. Through the Lick telescope and other powerful instruments about fifty million stars are visible. There are believed to be stars in existence beyond the reach of any telescope yet constructed.

The old proverbial purity of snow has been taken to task by a chemist. The clean snow on melting was fairly bright. It gave on analysis: Total solids, 24 grains per gallon; chlorine, trace; free ammonia, .016 part per million; albuminoid ammonia, .054 part per million. Iron also was present, giving a black color with ammonium sulphide. This water would be totally unfit to drink.

Thos. A. Edison Jr. is credited with announcing that he can photograph thought. Nicola Tesla tells a New York paper that he has "harnessed the rays of the sun" and will compel them to operate machinery and give light and heat. This invention is still in the experimental stage, but he declares that there is not a possibility of its failure. He has discovered a method

of producing steam from the rays of the sun. The steam runs a steam engine which generates electricity. It is probable the dailies have distorted the utterances of these electricians, who usually let results attest the worth of their efforts.

Pleasantries.

"How is your wife getting on?" "She's improving slowly. She is not well enough to attend to her household duties yet, but yesterday she was out shopping."

Needs Watching: "Plympton says he is very jealous of his reputation." "Well, he has reason to be. I wouldn't trust it for a moment if I had it."

"How should a man treat his inferiors?" asks an exchange. Well, if you have any inferiors, and are compelled to treat them, beer ought to be good enough.

Hobson—Some people make me tired; they never accept anything as a fact without wanting to know the why and wherefore of it. Saphead—Yes; I wonder why it is?

"Hullo, Browne! I thought you were going to the Klondike?" "Didn't have to. I went into a Klondike development company and got frozen out right here at home."

A story at hand, describing a love scene between the hero and heroine, says: "He wooed her with a will." That's a good way, especially if the wooer is old, and the will is in her favor.

"It is sad," murmured the Musing Theorizer, "to think that every man has his price." "Yes," admitted the Intensely Practical Worker, "and it is a sad fact that half the time he can't get it."

In sweeping a sickroom great care should be taken to avoid dust. Damp coffee grounds may be scattered over the floor to prevent dust, while a damp cloth should be used for dusting the furniture, which latter should not be overabundant in the sickroom. All articles used in the sickroom should be kept scrupulously clean. Water for the patients to drink should not stand long in the room, and be as fresh as possible. Very weak patients should not be under the necessity of rising in bed to drink, but should receive it through a bent tube or cup with a spout.

To clean black and burnt spiders or kettles, boil in them a little salt and vinegar, then scour vigorously with an iron dishcloth. Copper and brass may be brightened by a vigorous rubbing with a slice of lemon dipped in salt. Frozen vegetables are less impaired if placed at once in a cold salt-water bath and left in a warm place to thaw. If a teaspoonful of salt is added to a quart of milk it will keep sweet and pure a much longer time. If the cook at any time gets a dish too sweet to suit the taste a pinch of salt is a corrective, and vice versa.

Feathers and plumes straightened by damp weather or exposure to rain may be rejuvenated by shaking them over a shovel of hot coals sprinkled with salt. Fire is soon extinguished if sprayed or splashed with the following solution: Ten pounds of salt, five pounds of ammonia and three and a half or four gallons of water. This should be tightly corked and kept in store where there is special danger from fire.

An odd glove that is to be introduced for evening wear is of suede to the wrist. From the wrist to above the elbow it is of lace, run through with narrow ribbon; in some cases these ribbons are spangled with sequins. The glove is secured at the top by ribbons run through a beading of embroidery, and tied in a bow.

An inventor is endeavoring to perfect a phonographic watch. If he is successful the world will soon see a watch which, by touching a spring, will whisper the time in one's ear.

DOMESTIC ECONOMY.

Hints to Housekeepers.

Good carpets should be brushed daily with an ordinary sweeper, and once a week with a common broom.

A stale loaf may be freshened by dipping it in scalding water for an instant, and then placing it in the oven until dry.

In case of fire quickly close all doors and windows to check the draught, as this may enable you to confine the fire to a single room.

A cup of cold-boiled rice may be added to your breakfast muffins or waffles, making them lighter, more easily digested and more palatable.

All cold mashed potatoes should be saved for croquettes or potato puff. The latter is an admirable dish for luncheon. One cupful of mashed potatoes will make six croquettes or a good-sized puff.

Chicken and other small pieces of meat should either be thoroughly rolled in flour or dipped in beaten egg and rolled in dry crumbs. Southern cooks, who are renowned for their fried chicken always use lard for frying, cooking them as quickly as possible.

Cut glass, bound with sterling silver is a popular combination now for a table service, and is recommended for bowls and platters in which silver forks or spoons must be placed, for the contact of the metal with the cut edges frequently results in chips or cracks.

Never allow your frying material to run short. The cook is apt to go to the nearest corner and purchase a pound of lard. It will cost more than if you bought it in a quantity or used suet, and while it may be better for the corner store, it certainly is more expensive to the household.

Milk is an excellent substitute for soap in washing dishes. It not only softens the hardest water and gives dishes a clear, polished look, but it preserves the hands from chapping. It also prevents a greasy scum from appearing on the top of the water. The quantity of milk to use is half a cupful to a dishpan half full of very hot water.

When stovepipe cleaning is in progress, be as careful as one will, and there is pretty sure to be more or less soot dropped upon the carpet. There is never any need of being very much alarmed over this, however, for if an equal quantity of salt be added to the soot and the whole swept up together, there will scarcely be a trace of the latter left.

The broken pieces and crusts of bread not fit for toast may be put into a pan and dried, not browned, in a cool oven. Better leave the door open or you may forget them. When thoroughly dry roll them on an old bread board; sift through a coarse sieve; put them into a glass jar or tin box, stand them aside for breading croquettes, cutlets or oysters. This will save the purchase of cracker crumbs.

Flannels must be washed in water of uniform temperature. Whether it be hot, lukewarm or cold does not so much matter, but for the best results the water must be of like temperature for the several processes, all of which, including drying, should be conducted with despatch. Wash quickly, rinse quickly, dry quickly, is the injunction for washing flannels.

An excellent perfume for perfuming clothes that are packed away, and which will retain its properties for a long time, can be made in the following way: Pound to a powder one ounce each

of cloves, caraway seed, nutmeg, mace, cinnamon and Tonquin beans; also, as muchorris root as will equal the weight of all the foregoing ingredients. All that is needed is to fill little bags of muslin with this mixture and lay them among the garments.

If sheets and tablecloth are so folded that the selvage edges will pass through the wringer first, they will be less likely to curl and will be smoother. Never hang articles singly on a windy day; if doubled or quadrupled even, they will dry, and frayed and otherwise dilapidated corners will be less frequent. Use a small whisk broom to dampen clothes preparatory to ironing. Fold napkins and handkerchiefs once, place one upon another and roll. To prevent the fringe of towels from breaking and wearing off, snap the towels when the fringe is damp.

Domestic Hints.

QUEEN DROPS.—Cream one pound of washed butter and fine granulated sugar; add the yolks of eight eggs well beaten, one-quarter of a teaspoonful of salt, one pound of cleaned currants, then, alternately, the stiffly beaten whites and one pound of sifted pastry flour. Beat steadily for an hour, then bake as above, dusting the top of each cake before baking with a little powdered sugar.

SALT FISH OMELET.—One quart sweet milk, two tablespoons butter. Put into kettle, and when hot thicken with flour; should be quite thick. Add a box of shredded codfish. Remove and let become perfectly cold; then pour into a baking dish and add five well-beaten eggs. Stir thoroughly and bake forty minutes in good oven. Serve for breakfast with baked potatoes. Enough for eight persons.

BUTTER SCOTCH.—Place in a granite or porcelain lined kettle two cups of good molasses, one cup of sugar (either brown or white) and three-fourths of a cup of butter. Boil rapidly, stirring constantly, for about fifteen minutes, or until it snaps in ice water. Pour into square, buttered tins, allow to cool, then turn carefully out on a board and mark the desired sizes (about 1½ by 2 inches), then cut through and wrap each piece in waxed paper.

CREAMY RICE PUDDING.—Take a quarter of a teacup of rice and soak over night. In the morning pour off the water and put in a dish with one quart and one-half pint of milk, three-fourths of a cup of sugar and a nutmeg grated over the top. Put in a moderately hot oven and stir very often. Even after it is brown, keep stirring in the brown crust until the rice is done; after that, let it brown up nicely on top and then take it from the oven. If you wish to have a good creamy rice pudding never boil the rice before putting it in the milk; it is the rice cooking with the milk that makes it rich.

WASHINGTON CAKE.—Cream one-half pound of butter, add one pound of sugar and cream again. When light and smooth add the yolks of five well-beaten eggs, one cupful of flour and the grated rind of two lemons. Stir in one-half of a cupful of sour cream to which has been added one-half of a teaspoonful of soda dissolved in one teaspoonful of boiling water, one-half of a pound of seeded and halved raisins well floured, one-quarter of a teaspoonful of salt and two and a half cupfuls more of flour. Beat well for several minutes, stir in lightly the whites of the eggs whipped to a stiff froth, turn into a greased pan and bake in a moderate oven. If about three inches thick it will require forty-five minutes to bake.

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Sweetser, Ind., June 14, 1897.
Gentlemen:—The Granite State Feed Cooker and Water Heater which I purchased of you some time ago is giving perfect satisfaction. Very little fuel is required and a large amount of heat is produced. Every stock-raiser should own one. In my opinion, it is the best made.
Yours truly,
ROBERT SHERON.

25 gallon, \$12; 50 gallon, \$17; 100 gallon, \$24.

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Nicola Tesla's New Engine.

Tesla says that coal will not play so important a part in producing the power of the earth as wood does now, and shows an invention of his in the experimental stage, about which he declares that there is no possibility of its failure. He declares that the apparatus is so simple that the least learned in mechanics can comprehend it, and if it were fully described others might seize his idea, patent it, and control a blessing which he intends shall be a free gift to the world. This is so extraordinary, so totally at variance with established customs, that it is almost as unbelievable as the discovery itself.

In the center of a large room with a glass roof Tesla will place a huge cylinder of thick glass on a bed of asbestos, supported by a firm stone pedestal placed in the center of the room. The circle will be laid lengthwise, and will be surrounded by a circle of mirrors covered with asbestos coats to refract the rays of the sun into the glass cylinder. The cylinder will always be kept full of water, which will have been treated by a secret chemical process, which Tesla claims to have devised, and which, he says, is the only complicated part of the discovery. All day long, while the sun shines, its rays will be refracted into the glass cylinder. The chemical treatment makes the water easily susceptible to heat, and in a little while the vaporizing begins. The steam thus in the cylinder is carried to a steam engine of the ordinary description. The engine in turn will generate electricity, which will be stored and transmitted by cables to the factory and the home. The power house will store sufficient electricity to meet all demands during the time that the sun does shine, although it may be clouded over for weeks at a time. "Most people will contend that the plan to harness the rays of the sun and make them operate the machinery of man, and to give light and heat, is the idle fancy of a dreamer," said Tesla. "I would indeed be surprised if they were to contend otherwise. There has never yet been proposed a single great scientific enterprise that has not at first been met with ridicule and laughed at as something beyond the bounds of possibility. Every one will remember the days of horse cars, when electric street railways were first talked about as possibilities. The suggestions of cars running along the streets without horses in front of them was laughed at. But now people have trolley cars running in villages where, a few years ago, horse cars were considered too expensive, and they pay no more attention to the marvel they witness every day than they do to an express wagon rumbling along the same street. It will be the same with the motive power generated by harnessing the rays of the sun. The first two months that the generating stations are in operation they will be places of intense interest, but after that people will think no more about them, except as places of business. They will regard them as little as they do gas tanks, electric light plants or water reservoirs. They will simply suggest monthly or quarterly bills, such as they now pay for water or gas, except that the bills will be much smaller. I do not care at this time to go into details. I have not yet begun the practical part of the work. I wish to have the experimental part so completed that no one can stick a pin into it. But I will say that the results so far achieved are all that I could desire, and they place all possibility of a failure beyond the shadow of a doubt. I am certain that the new apparatus will come into speedy and general use. Its cost is so insignificant that it cannot be ignored. After the apparatus has been placed in any station there is absolutely no expense in running it for years, except the salaries of engineers and the small cost of the wear and tear of the apparatus, which will be eventually anything but expensive. The whole business will be so simply arranged that there will be no probability of its breaking down; but even if it should happen that one

station would be useless for a short time, the immense amount of electricity always at hand—for it will cost practically no more to generate 5000 volts than to generate so many million volts—will bridge over the difficulty. There would be nothing to prevent the generation of a whole year's supply in case of an accident in the generating machinery. There is nothing unnatural in the proposition to have the sun drive the machinery of the earth and, indirectly, to heat and light the planet at night as well as by day. It is a great deal less artificial than for men to delve down into the bowels of the earth at so much trouble and loss of life in order to get a few handfuls of coal to run an engine a short time and then to make spasmodic return trips for more. As to the proposition to have each city look after the heating and lighting of the homes of its inhabitants, there is nothing more extraordinary about it than the present system of cities supplying water pipes and sewers and private companies supplying steam heat, gas light, electric light and motive power."

SLEEPLESSNESS

ESPECIALLY FREQUENT IN HIGH ALTITUDES.

How it may be Overcome in any Climate.

From the Chieftain, Pueblo, Col.

While the Rocky Mountain region is justly famed for its salubrious climate, and is becoming more and more the mecca toward which pilgrims are traveling from all parts of the world that they may fill their weakened lungs with life-giving air, yet there are ailments in that climate as in any other, one of the chief of which is sleeplessness. This is due to the rarity of the air, which on some constitutions is too stimulating to the nerves. In some cases patients are compelled to remove for a time to the sea level to escape the high nervous strain. As sleeplessness is not an uncommon accompaniment to certain nervous conditions (in any climate) we propose to repeat a little story of a woman of Pueblo, Col., which may point a moral to others, who have had a similar affliction.

The woman came to Pueblo thirty years ago, when the town was a frontier settlement, and Indians were by no means unusual visitors, bands of Utes often passing through on their way from the mountains down to the plains to hunt buffaloes.

She had been in good health, until a few years ago when at each recurring spring-time she became debilitated, weak and languid. Her strength left her, she was listless and lifeless, and was obliged to whip herself to every task. This, too, in spite of the stimulating effects of the high altitude. The perhaps most serious difficulty, however, was sleeplessness, which she could not cure. The long weary watches of the night told on her health and she dreaded the approach of night. This lack of sleep weakened her strength and brought on extreme nervousness, until she was a physical wreck.

As she could not well take the long journey necessary to a change of climate, she sought for some restorative, that would build up the nervous system, and thus enable her to get that sleep and rest without which she could not long endure the strain. She at length found this in Dr. Williams' Pink Pills for Pale People. She said to the reporter: By the time I had taken one box of these pills, I not only felt stronger but, to my surprise, found that I could sleep.

"I have taken four boxes now and can take a long nap during the day and sleep soundly all night.

"The medicine not only takes away that weary depressed feeling but creates a buoyancy and exhilaration that does not pass away when one stops taking the pills.

"I am forty-nine years old and about thirty years ago I began to be troubled with gatherings in my head. The trouble continued until I was unable to hear a sound through my right ear and my left ear was badly affected. I had no idea that the pills would benefit my ears, but they evidently did, as my hearing is very much improved.

"I consider Dr. Williams' Pink Pills for Pale People a wonderful medicine." The address of the woman is: Mrs. H. L. Graham, 214 E. 4th St., Pueblo, Col.

STATE OF COLORADO,)
COUNTY OF PUEBLO,) ss.
Subscribed and sworn to before me this 6th day of July, 1897.

(SEAL)

GEORGE W. GILL,
Notary Public.

Dr. Williams' Pink Pills for Pale People contain in a condensed form all the elements necessary to give new life and richness to the blood and restore shattered nerves. They are an unfailing specific for such diseases as locomotor ataxia, partial paralysis, St. Vitus' dance, sciatica, neuralgia, rheumatism, nervous headache, the after effect of la grippe, palpitation of the heart, pale and sallow complexion, all forms of weakness either in male or female. Dr. Williams' Pink Pills are sold by all dealers, or will be sent post paid on receipt of price, 50 cents a box, or six boxes for \$2.50 (they are never sold in bulk or by the 100), by addressing Dr. Williams' Medicine Co., Schenectady, N. Y.

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PEACHES, PLUMS, ALMONDS, ETC.

I cut all buds myself from selected bearing trees and personally superintend all work in nursery
and employ only intelligent, trustworthy help.
Trees strong, thrifty and healthy, and grown on new soil.

ADDRESS FOR PRICES, BOX 4, SAN JOSE, CAL.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING JAN. 11, 1897.

597,252.—THRASHER FEEDER—F. H. Ackerman, Shedd, Or.
597,257.—FRUIT DRIER—A. H. Blackburn, Petaluma, Cal.
597,101.—WRENCH—F. O. Collins, Vancouver, Wash.
597,175.—ANTI-FRICTION BEARING—J. R. Coryelle, S. F.
597,316.—WELL BORER—G. W. Durbrow, Salton, Cal.
597,273.—APPARATUS FOR RAISING LIQUIDS—R. W. Elliott, Brentwood, Cal.
597,237.—GATE—L. M. Hawes, Sacramento, Cal.
596,998.—BICYCLE CANTEN—Hawkins & Gardner, Jerome, A. T.
597,166.—COMPASS—Heinrich & Wood, S. F.
597,287.—BICYCLE ATTACHMENT—F. P. Hurst, Aurora, Or.
597,167.—VEHICLE JACK—J. F. Killian, Stockton, Cal.
597,116.—TANK—A. W. Krause, Los Angeles, Cal.
597,241.—SCREEN FOR DITCHES—N. Lamb, Yreka, Cal.
597,295.—PENCIL HOLDER—O. R. Pihl, Portland, Or.
597,301.—CHANGE MAKING DEVICE—A. A. Smith, Aberdeen, Wash.
597,336.—HEAD REST—Nellie R. Stone, Bryanmawr, Cal.
597,210.—PEANUT HEATER—T. M. Walker, Portland, Or.
28,159.—DESIGN BEARING BRACKET—R. H. Postlethwaite, S. F.
28,160.—DESIGN BEARING BRACKET—R. H. Postlethwaite, S. F.
28,161.—DESIGN BEARING BRACKET—R. H. Postlethwaite, S. F.
28,153.—BICYCLE CARRIER—R. G. Woodward, Alameda, Cal.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

CHLORIDIZING SILVER ORES.—Ernst Heilgendorfer, Canelas, Estado de Durango, Mexico. No. 597,238. Dated Jan. 11, 1898. This invention relates to a process for chloridizing silver ores so that a much larger quantity of the precious metals can be saved, and the objections to a combination of chlorination and amalgamation and those attendant upon what is known as a chloridizing roasting process are overcome. It consists essentially in subjecting the ore, either raw or oxidized, to the action of copper chloride in conjunction with chloride of sodium under certain conditions which will produce the reactions with the ores treated, which is especially advantageous with rebellious ores.

SELF-CLEANING SCREEN FOR DITCHES.—N. Lamb, Yreka, Cal. No. 597,241. Dated Jan. 11, 1898. The object of this invention is to provide an automatically operating device by which ditches may be cleared of chips and other refuse which float in the ditches, and also to prevent fish from entering the ditches where the same water is employed in pisciculture. This invention consists essentially of a series of vertical bars or teeth fixed at the lower ends to a horizontal rod and a series of curved teeth fixed spirally upon a revolving shaft, so that these teeth will pass between the vertical bars and lift up any material which may be flowing through the ditch and arrive at these bars. The material is thrown out at one side through an embrasure, where it falls upon the ground or into a suitable receptacle. The revolving shaft carrying spirally arranged teeth is rotated by means of a water-wheel, journaled a little distance therefrom, so that the current of water in the ditch will turn this wheel. A belt or band from the water-wheel shaft to the shaft of the spiral arms will turn the latter. The vertical bars are sufficiently near together to prevent the refuse passing between, and will also prevent young fish which may have escaped from their nurseries from passing, and the revolving arms passing between these vertical bars will lift anything which arrives, and, by reason of their spiral arrangement, discharge it to one side. In the case of fish, they may be delivered into a receiver containing water, so that they can be preserved alive.

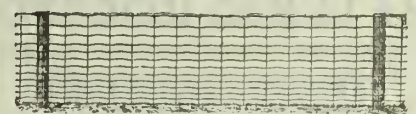
SUBTERRANEAN ELECTRIC CONDUIT.—Wm. D. M. Howard, San Francisco, Cal. No. 596,812. Dated January 4, 1898. This invention relates to a means for transmitting and supplying an electric current to movable objects, and is more especially designed to provide a subterranean electric conduit within which the trolley wires, rods or tracks are suspended, insulated, and protected from the action of moisture, the tendency to leakage, and induced currents. The object of this invention is to transmit underground electric currents from conducting or trolley wires to a moving object with safety, economy and durability, both mechanically and electrically, thus conveying a current of high electrical efficiency at a small cost of maintenance, and avoiding the use of the unsightly poles and naked wires employed in ordinary trolley systems, together with the danger arising from such wires on account of the necessary high voltage of the current carried by them. The invention is especially adaptable to the transmission of an electric current to street cars for the purpose of propelling them. The conduit consists of two concentric tubes made of iron or other suitable material, the outer tube enclosing the inner one, which is held in position by iron columns or standards centrally fixed in the bottom of the outer tube

and having the inner tube bolted or otherwise secured upon the inner ends of the standards. The outer tube has a longitudinal slot made in the upper part of its periphery, forming a continuous channel through which connection is made from the car to the interior of the tube. The interior tube is left open at the bottom for about one-fourth the circumference and the edges are turned inwardly to form guide rails for a plow or carrier which is adapted to travel thereon. The electric current is transferred from the trolley wires, which are contained in the inner tube, to the moving object, or the circuit is completed by means of the traveling plow or carrier, the plates forming this carrier projecting downwardly through the opening in the bottom of the inner tube, thence curving around so as to encircle this tube out of contact with it and the outer tube. These plates unite in a shank which passes up through the slot in the outer tube and makes connection with the car. A peculiarly arranged truss frame supports the shank and the connected plows, springs being so arranged that a freedom of movement is allowed when the car passes curves, and the plow is allowed to adjust itself to the curvature of the slot.

AUTOMATIC GATE.—Levi M. Hawes, Sacramento, Cal. No. 597,237. Dated Jan. 11, 1898. This invention relates to improvements in gates of that class which are adapted to be opened and closed by the approaching and receding vehicle. It consists essentially of a fixed post to which the gate is hinged, upper hinge pins bent diagonally having supporting bracket braces, corresponding eyes let into and fixed to the top of the inner ends of the gate, concave segments fixed to the lower ends of the inner gate stiles and corresponding segments pivoted to the bottom of the fixed post having sockets upon each side of their pivot points adapted to engage the ends of the gate stile segments, so that the gate is retained in a closed position when the turnable segments are in their normal position, and is tilted so as to swing when the segments are turned to an angle.

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A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular. THE LAWRENCE-WILLIAMS CO., Cleveland O.



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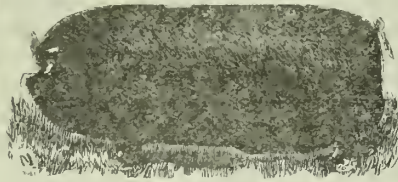
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MRS. J. G. FREDERICKS, Madrona, Cal. Fresh Eggs in small or large lots at reasonable prices from choice Brown and Buff Leghorns, Black and White Minorcas.

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is the standard machine for hatching strong, healthy chicks. Self-regulating, patent turning trays, drying room for chicks, non-explosive lamp—just a few of its good points. Sold under positive guarantee to work perfectly. Beautifully made and durable. Our 128 page catalogue describes them fully; tells many things about poultry raising you should know. Mailed for 6 cts. DES MOINES INC. CO. Box 540 DES MOINES, IA.

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Liquid Air Intensely Cold.

It is thought that the question of future economy in motive power may be intimately associated with the important discovery of liquefied air. There are so many uses to which it can be put that scientists hardly know where its usefulness will end if it can be produced at a low rate of cost in commercial quantities. Among other advantages, it is claimed that it can be used for illuminating purposes by mixing its escaping gases with atmospheric air in certain definite proportions. Its use in physical experiments has been a most important one in developing the action of intense cold. A most curious phenomenon is shown in the condition of meats at the extremely low temperature derived from the evaporation of liquid air. Mutton becomes so extremely hard that it rings like a piece of porcelain when struck with an iron rod, and can be crushed into a fine dry powder with a hammer, muscle, fat and bone being all mingled together, and as dry as sand.

If a test tube $1\frac{1}{2}$ inches in diameter, having a couple of pounds of mercury in the bottom, is immersed in liquid air, the mercury will be frozen solid in a few seconds, and may be hammered out and manipulated like lead. An alcohol thermometer of large size will be frozen instantly upon being immersed in it, and a tablespoonful poured on about a liquid ounce of whiskey will freeze it at once in flat scales, giving the whole the appearance of cyanide of potassium. It may be emptied out on a table, and will remain frozen in that condition for fully five minutes. A teaspoonful of liquid air poured on top of a tank of cold water goes into a spheroidal state instantly, in globules of about half the size of ordinary marbles, which fly around on the surface, leaving a trail of white vapor behind them. If any of the liquid be poured on silk, linen or cotton, it will be charred and destroyed just as if it had been put in an oven and browned, though it will make no change in the color.

Professor Linde of Munich has discovered a method of liquifying air which is considered one of the most ingenious methods recently known. It is to be sold by the quart in iron bottles. A quart bottle will do the work of a ten-pound piece of ice. A considerable reduction in cost will be necessary, however, before this commodity will take the place of ice in our refrigerators, and even if it were cheaper there seems to be no way of moderating the cold.

Instead of chilling the air moderately in an ice box, it freezes everything solid; but this will doubtless be overcome in time. In handling the bottles the fingers will be instantly frozen if they are not covered with insulating gloves of rubber. In a few years, it is claimed, the methods may be so perfected that liquid air will be used entirely for refrigeration instead of ice.

A PLAN for constructing an underground pipe, that is not to be subjected to a great pressure, has been employed in France with satisfactory results. A trench is dug and the bottom levelled with cement mortar; an inflated rubber tube covered with canvas is then laid in and cement is poured around and over it. The trench is then filled in and the tube deflated and withdrawn. It is said that 6-inch pipes have been made of hydraulic lime and sand at a cost of 22 cents per yard.

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LUCAS COUNTY,

FRANK J. CHEYNEY makes oath that he is the senior partner of the firm of F. J. CHEYNEY & CO., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay to the sum of ONE HUNDRED DOLLARS for each and every case of CATARRH that cannot be cured by the use of HALL'S CATARRH CURE.

Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1896.

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Notary Public.

Hall's Catarrh Cure is taken internally, and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.

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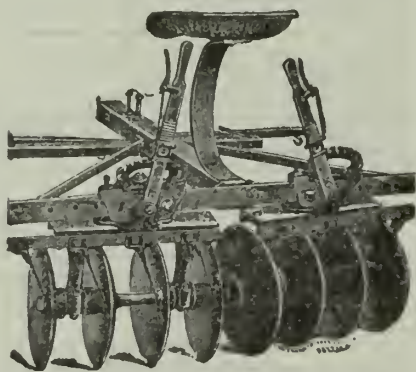
Sold by Druggists, 75c.
Hall's Family Pills are the best.

The following process, invented by Mr. Rubbneck, for metallizing wood, is thus described by *Les Mondes*: "The wood is first immersed for three or four days, according to its permeability, in a caustic alkaline lye (calearious soda) at a temperature from 75 degrees to 90 degrees. From thence it passes immediately into a bath of hyposulphite of calcium, to which is added, after 24 or 36 hours, a concentrated solution of sulphur in caustic potash. The duration of the bath is about 48 hours, and its temperature is from 35 to 50 degrees. Finally the wood is immersed for 30 or 50 hours in a hot solution (35 degrees to 50 degrees) of acetate of lead. The process, as may be seen, is a long one, but the results are surprising. The wood thus prepared, after having undergone a proper drying at a moderate temperature, acquires under a burnisher of hard wood a polished surface, and assumes a very brilliant metallic lustre. The lustre is still further increased if the surface of the wood be first rubbed with a piece of lead, tin, or zinc, and be afterwards polished with a glass or porcelain burnisher. The wood thus assumes the appearance of a true metallic mirror, and is very solid and resistant."

LORD KELVIN showed in a recent address that all the oxygen in the atmosphere probably came from the action of sunlight on plants. When the earth was a globe of hot liquid it contained no vegetable fuel, and probably no free oxygen. But as it cooled off plants appeared on its surface, and these began to evolve oxygen through the medium of the sunbeams. Upon the oxygen thus derived we depend upon the maintenance of life by breathing. When we burn coal, or other vegetable fuel, we use up oxygen, and it is to plants again that we owe the restoration of the oxygen thus lost to the air. If they failed to keep up a sufficient supply, the atmosphere would gradually part with its oxygen, and the inhabitants of the earth would gradually disappear in consequence of asphyxiation.

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Guaranteed to seed 1 lb. of raisins in 5 minutes. Simple to operate and easy to clean.

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Stanley's Corrugated Steel Hinges.

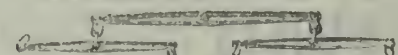
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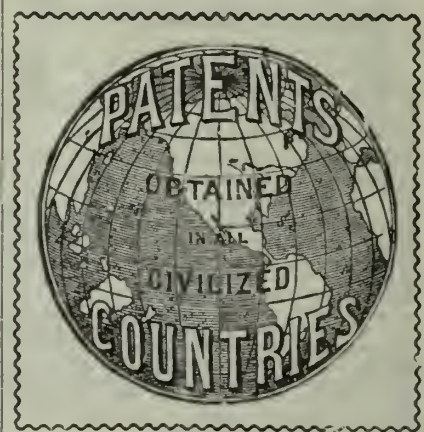
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PATENTS



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S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, January 26, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|-----------------|-----------------|
| Wednesday..... | 91 1/4 @ 91 1/2 | 81 1/4 @ 82 1/2 |
| Thursday..... | 92 1/4 @ 91 3/4 | 84 1/4 @ 83 1/2 |
| Friday..... | 92 3/4 @ 91 3/4 | 84 1/4 @ 84 1/2 |
| Saturday..... | 92 1/4 @ 91 1/2 | 84 1/4 @ 84 1/2 |
| Monday..... | 93 1/4 @ 93 1/2 | 84 1/4 @ 84 1/2 |
| Tuesday..... | 93 1/4 @ 93 1/2 | 84 1/4 @ 84 1/2 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|------------|-------------|
| Wednesday..... | 7s 0 1/2 d | 6s 10 d |
| Thursday..... | 7s 1 1/2 d | 6s 10 1/2 d |
| Friday..... | 7s 2 1/2 d | 7s 0 d |
| Saturday..... | 7s 2 1/2 d | 7s 0 1/2 d |
| Monday..... | 7s 4 d | 7s 1 1/2 d |
| Tuesday..... | 7s 4 1/2 d | 7s 1 1/2 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|---------------------|---------------------|
| Thursday..... | \$1 39 @ 1 38 1/2 | — @ — |
| Friday..... | 1 39 1/4 @ 1 39 | — @ — |
| Saturday..... | 1 39 1/4 @ 1 38 1/2 | \$1 28 1/4 @ — |
| Monday..... | — @ — | — @ — |
| Tuesday..... | 1 40 1/4 @ 1 40 1/2 | 1 30 1/4 @ 1 31 1/2 |
| Wednesday..... | 1 40 1/4 @ 1 41 1/2 | 1 32 @ 1 33 1/2 |

Wheat.

The wheat market has been against buyers the current week, and is decidedly firmer than at date of last report. In milling grades there has been a quotable improvement of fully 50c per ton, and buyers have found it difficult to secure desirable qualities at the advance. Values for shipping wheat were not well defined, owing to inactivity in the same, but exporters could not have purchased freely without paying an advance of 50c to \$1 per ton over figures lately bid. The improvement was due to stiffer markets East and in Europe, and also to unfavorable crop weather in this State. A decrease of 730,000 bushels was reported this week in the visible supply on the Atlantic side. Much of the wheat in the East is under strong control and is being held for higher figures. There has been a decided falling off in the deliveries of imported wheat in Great Britain, leaving the quantity now arriving less than estimated current requirements. Thus all conditions for the time being tend to give a strong tone to the market.

Ship owners, or more correctly speaking, their representatives and agents, are making strenuous efforts to show that stiffer and higher rates for ocean freights will prevail the coming season than have been current the present season up to date. Any upward movement in freights must, of course, be accompanied by a corresponding depression in wheat values, all other conditions hingeing on the situation being equal. The argument is advanced that ships which were chartered to arrive during the current harvest year had to accept lower rates than if they had waited for spot engagement. Having had this experience, it is assumed they will not repeat the experiment the coming season. A further argument used in favor of stiffer freight rates the coming summer is that much tonnage will be diverted to coast business, on account of the rush to the new mining regions of the North. The reason set forth in the interest of ship owners, that higher freight rates will have to be paid in 1898 than were current in 1897 for deep-sea ships in the grain carrying trade, are not wholly without merit. It does not follow by any means, however, that the forecast in favor of ships and naturally against wheat will develop as predicted. That the Klondike excitement will draw off sufficient tonnage to materially affect deep-sea freights is extremely doubtful. It is now known that steam vessels suitable for the Alaskan trade are being diverted here from other portions of the world, and this extra amount may prove more than sufficient for the increased requirements. Furthermore, the prospects of improved ocean freights will tend to attract disengaged vessels this way. While deep-sea freights for grain may be tolerably firm early in the season, the chances are favorable for their ruling lower later in the year, to the decided benefit of wheat.

California Milling.....\$1 42 1/4 @ 1 47 1/4
Cal. No. 1 shipping, alongside.....1 40 @ 1 42 1/4

| | |
|----------------------------|---------------------|
| Oregon Valley..... | 1 37 1/4 @ 1 42 1/4 |
| Walla Walla Blue Stem..... | 1 43 1/4 @ 1 47 1/4 |
| Walla Walla Club..... | 1 32 1/4 @ 1 42 1/4 |

CALL BOARD PRICES.

On San Francisco Call Board prices for No 1 white wheat per cental for the week were as follows for the options named:

May, 1898, delivery, \$1.38 1/4 @ 1.41 1/2.
December, 1898, delivery, \$1.28 1/2 @ 1.33 1/2.

Wednesday, at regular noon session of Call Board, May wheat sold at \$1.40 1/4 @ 1.41 1/2; December, 1898, \$1.32 @ 1.33 1/2.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|-------------------|-----------------------|
| Liv. quotations..... | 7s 11d @ 7s 11d | 7s 11d @ 7s 11d |
| Freight rates..... | 15 @ 17 1/2 s | 30 @ 32 1/2 s |
| Local market..... | \$1.52 1/2 @ 1 60 | \$1.41 1/4 @ 1.43 1/4 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

Values for this commodity show no quotable improvement, although to be in keeping with recent rates for desirable qualities of milling wheat, prices for flour should show more firmness than has lately been experienced. There are no heavy spot supplies, but at the same time enough to accommodate the immediate demand.

| | |
|---------------------------------|-------------|
| Superfine, lower grades..... | 83 @ 83 25 |
| Superfine, good to choice..... | 3 35 @ 3 60 |
| Country grades, extras..... | 4 00 @ 4 25 |
| Choice and extra choice..... | 4 25 @ 4 50 |
| Fancy brands, jobbing..... | 4 50 @ 4 65 |
| Oregon, Bakers' extra..... | 3 90 @ 4 25 |
| Walla Walla, Bakers' extra..... | 3 90 @ 4 25 |

Barley.

Higher values were established for this cereal immediately following last review, the improvement being based on weather conditions. As a large proportion of the barley crop is grown in the southern part of the State, the market for barley is more sensitive to weather influences than is the market for wheat. For the next sixty or ninety days there will be little else than a weather market for barley, as the general tone and prices will be almost certain to hoh up and down, barometer like, with the favorable and unfavorable changes in the weather, as affecting prospects for coming season. Stocks now remaining in wholesale hands are of only moderate volume. Trading in options on Call Board was not heavy, but the general tendency of values was in favor of sellers. The market closed strong.

| | |
|---------------------------------|-----------------|
| Feed, No. 1 to choice..... | 97 1/4 @ 1 00 |
| Feed, fair to good..... | 95 @ 97 1/2 |
| Brewing, No. 1 to choice..... | 1 15 @ 1 12 1/2 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

May, 1898, delivery, 89 1/2 @ 94 1/2 c.
December, 1898, delivery, — @ — c.

Wednesday at regular noon session of the Call Board May, 1898, feed sold at 93 1/2 @ 94 1/2 c.

Oats.

Market for this cereal has been moderately firm the current week, with no particularly heavy offerings of any description. Inquiry was mainly for cheapest sorts and for the most select qualities, these selling more promptly at full current rates than did the medium grades. The rather firm figures current on barley turned considerable attention to low-priced oats.

| | |
|-------------------------------|-----------------|
| White Oats, fancy feed..... | 1 20 @ 1 25 |
| White, good to choice..... | 1 15 @ 1 20 |
| White, poor to fair..... | 1 10 @ 1 12 1/2 |
| Gray, common to choice..... | 1 15 @ 1 20 |
| Milling..... | 1 17 1/2 @ 1 20 |
| Surprise, good to choice..... | 1 20 @ 1 27 1/2 |
| Black Russian..... | 1 20 @ 1 50 |
| Red..... | 1 10 @ 1 40 |

Corn.

While there was no pronounced change in quotable values or general tone, the tendency of the market was more favorable to the selling interest than immediately prior to last issue. The developed improvement was partly due to limited receipts and offerings, but was fully as much or more on account of the rather strong feeling which has been lately prevailing in the markets for other feed cereals.

| | |
|----------------------------------|-----------------|
| Large White, good to choice..... | 97 1/4 @ 1 00 |
| Large Yellow..... | 1 02 1/4 @ 1 05 |
| Small Yellow..... | 1 00 @ 1 02 1/4 |
| Eastern Yellow..... | — @ — |
| Egyptian White..... | — @ — |
| Popcorn, shelled, 3/4 lb..... | — @ — |

Rye.

Market is without any especially new or noteworthy feature. Values are being as

well sustained as during preceding week. There is not much arriving from any quarter. Good to choice, new.....1 05 @ 1 07 1/2

Buckwheat.

Sellers are few and they have very much their own way as to prices, provided, of course, that asking figures are kept within reasonable bounds.

| | |
|---------------------|-------------|
| Good to choice..... | 1 60 @ 1 70 |
| Silverskin..... | 1 70 @ 1 80 |

Beans.

There is a moderate amount of business doing, but it continues, as for some time previous, to be mainly in the filling of northern coast orders and on local account. Pinks and Small Whites received, perhaps, more attention than any other two varieties, and also led in the matter of firmness. The market for nearly all kinds, however, inclined against the buying interest. For some descriptions an advance on quotations was asked, but higher figures than below noted were obtainable only in a small way. Limas proved an exception to the general course of the market, this variety ruling very quiet at present, being dependent almost wholly on the East for an outlet. Eastern dealers appear to be amply stocked for the time being. The dry weather, however, is causing holders of Limas to be firmer in their views.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 25 @ 1 50 |
| Small White, good to choice..... | 1 35 @ 1 45 |
| Lady Washington..... | 1 30 @ 1 40 |
| Butter, small..... | 1 35 @ 1 50 |
| Butter, large..... | 1 60 @ 1 75 |
| Pinks..... | 2 00 @ 2 05 |
| Bayos, good to choice..... | 2 90 @ 3 00 |
| Reds..... | 1 60 @ 1 75 |
| Red Kidneys..... | 2 00 @ 2 25 |
| Limas, good to choice..... | 1 65 @ 1 75 |
| Black-eye Beans..... | 2 25 @ 2 50 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

The bean market on the Atlantic side is thus outlined by a New York authority, according to recent advices coming through by mail, prices quoted being per 60-pound bushel:

Receivers have been somewhat disappointed with the course of trade this week. Demand from some jobbers has shown no force, and export orders have come to hand rather slowly. Offerings of Marrow have been fairly liberal, partly fresh arrivals, and partly the accumulations of last month, and with only a moderate trade prices have not been more than steady; sales of choice quality in a jobbing way have been mainly at \$1.40, but shippers have filled their orders at \$1.37 1/2 @ 1.40, several lots going at the inside rate. No class of trade has shown any interest in Medium, and the continued dullness has weakened some holders' views; average choice lots can be bought at \$1.17 1/2, but fancy genuine Medium are held at \$1.20, and have reached that price in exceptional instances. Pea have sold better than Medium, but the effort to get more than \$1.15 has failed. The advance in Red Kidney was established more on account of light supplies, than from important export orders; shippers have purchased a few hundred barrels during the week mainly at \$1.70 c. o. b., and they can still buy at that. So few White Kidney were at that price have not changed much. Turtle Soup in light receipt and steady, but scarcely any call at present. Lima very dull at \$1.31. Advancing prices have brought out rather more trade for green peas, and the market closes firm; jobbing sales of hags, both green and Scotch, are mainly at outside quotations.

Dried Peas.

There are few of any sort arriving, and market remains firm at last quoted advance. Select qualities are especially salable to advantage.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 75 @ 1 85 |
| Niles Peas..... | 1 40 @ 1 50 |

Hops.

The leading features of the market in this center remain virtually the same as previously noted. Stocks are principally in second hands and are being very steadily held. Dealers are not eager to purchase, however, at figures correspondingly as stiff as the prices they are contending for. Recent purchases from growers at full figures or near thereto have been of hops needed for the filling of immediate shipping orders.

| | |
|--------------------------------|---------|
| Good to choice, 1897 crop..... | 12 @ 16 |
|--------------------------------|---------|

Advices of late date coming from New York by mail furnished the following regarding the hop market:

The condition of the local market has continued quite favorable to the selling interest. A good deal of stock has come forward again this week but more than 4500 bales were in transit for export and the supply for sale has been handled very comfortably. Brewers have maintained good interest, and have been steady buyers, while exporters have been on hand constantly, though their purchases have been restricted by the inability to get the class of hops desired. A very firm feeling has prevailed throughout and values have stiffened a little; quotations cannot be changed materially but nearly all grades are moving up into the next higher class. Really choice State hops are nearly gone; the few lots that remain in first hands are held for special trade and could not be bought at the rates recently current. For what are now classed as prime 18c is quite generally asked, while other qualities range from 12c to 17c for common to very good. Choice P-cities are firm at 19c, and other grades sell from 18c down to 11c for odd lots of poor Oregon. Business in this State has been quiet during the week, but for the light hold'ings growers ask more money. The bulk of the Pacific coast hops has been sent forward. Both mail and cable advices from London indicate stronger markets for all grades.

Wool.

The local market remains quiet, but presents a healthy tone. There is considerable

Wool still in warehouse here for this late date, probably 8,000,000 pounds, including scoured stock, but it is held with confidence, owners being reasonably certain that most, if not all, of it will be required before the coming clip becomes available for manufacturers. Current quotations are expected to be realized on the Wools now stored in this center, and the expectations are certainly warranted when the values prevailing in the East and Europe are taken into consideration.

SPRING.

| | |
|-----------------------------------|---------|
| Oregon Valley..... | 17 @ 18 |
| Oregon Eastern, choice..... | 13 @ 15 |
| Oregon Eastern, fair to good..... | 10 @ 12 |

FALL.

| | |
|----------------------------|-----------|
| Middle County, free..... | 10 @ 13 |
| Do do defective..... | 9 @ 11 |
| Northern, free..... | 11 @ 14 |
| Do defective..... | 10 @ 11 |
| Southern Mountain..... | 9 @ 12 |
| San Joaquin defective..... | 7 @ 8 1/4 |

Hay and Straw.

Firmness has been the prominent feature of the Hay market most of the time since last review. Quotations were again marked upward, and in some instances select qualities commanded a slight advance on quotable rates. Values may show no further improvement, as they are now on a tolerably high plane, but no fears are entertained that there will be any special accumulations of Hay in the wholesale center during the balance of the season. Straw is in ample supply for current requirements, and is offering at former figures.

| | |
|----------------------|---------------|
| Wheat..... | 13 00 @ 17 00 |
| Wheat and Oat..... | 12 00 @ 16 00 |
| Oat..... | 12 00 @ 14 50 |
| Barley..... | 11 00 @ 14 00 |
| Clover..... | 11 00 @ 13 00 |
| Stock Hay..... | 10 00 @ 11 00 |
| Alfalfa..... | 10 00 @ 11 50 |
| Compressed..... | 12 00 @ 17 00 |
| Straw, 3/4 bale..... | 30 @ 45 |

Millstuffs.

A firm market is being experienced for most kinds of mill feed, the tendency being more especially pronounced against buyers of Bran and Rolled Barley, the latter sorts being in more active request than Middlings or Milled Corn.

| | |
|---------------------|---------------|
| Bran, 3/4 ton..... | 29 50 @ 22 00 |
| Middlings..... | 22 00 @ 21 00 |
| Barley, Rolled..... | 22 00 @ 22 50 |
| Cornmeal..... | 23 00 @ 23 50 |
| Cracked Corn..... | 23 50 @ 24 00 |

Seeds.

Market is in the main very quiet, and there are no changes of consequence to record in quotable values. Mustard Seed is in such light stock that only nominal quotations for the same can be given at this date. Advanced prices last quoted for Flaxseed are being well maintained. Alfalfa Seed is offering freely, with market as favorable to buyers as for some time past.

| | Per ctl. |
|----------------------------|---------------|
| Mustard, Yellow..... | 2 75 @ 3 00 |
| Mustard, Trieste Seed..... | 2 75 @ 3 00 |
| Mustard, Wild Brown..... | 2 00 @ 2 25 |
| Flax..... | 1 90 @ 2 00 |
| | Per lb. |
| Canary..... | 2 1/4 @ 2 3/4 |
| Rape..... | 2 1/4 @ 2 3/4 |
| Hemp..... | 2 1/4 @ 2 3/4 |
| Alfalfa, Utah..... | 5 1/2 @ 6 |

Bags and Bagging.

There are no evidences of any trading of consequence being done at present in Bags or Bagging of any description. Dealers are keeping very quiet and consumers are content to wait, feeling confident that they will not lose anything by so doing. Grain Bags and Wool Sacks are expected to be in quite liberal supply before they will be needed for the coming season.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, buyer July..... | — @ — |
| Calcutta Grain bags, 22x36, spot..... | 5 1/2 @ 5 3/4 |
| State Prison bags, per 100..... | 5 40 @ — |
| Wool sacks, 4 lb..... | 30 @ — |
| Wool sacks, 3 1/2 lb..... | 27 @ — |
| Gunnies..... | 10 @ — |
| Bean bags..... | 4 1/2 @ 4 3/4 |
| Fruit sacks, cotton..... | 5 1/2 @ 6 1/2 |

Hides, Pelts and Tallow.

Hides and Pelts are in good request at full current rates, the market presenting a healthy tone. Tallow of desirable quality is meeting with prompt custom at the prevailing figures.

Only select bides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|-----------|
| Heavy Steers, over 56 lbs..... | — @ 10 1/4 | — @ 8 1/4 |
| Medium Steers, 48 to 56 lbs..... | — @ 9 1/4 | — @ 8 1/4 |
| Light Steers, under 48 lbs..... | — @ 9 | — @ 8 |
| Heavy Cow Hides, over 50 lbs..... | 9 @ 8 1/2 | 8 @ 8 1/2 |
| Light Cow Hides, under 50 lbs..... | — @ 9 | — @ 8 |
| Wet Salted Kip..... | — @ 10 | — @ 9 |
| Wet Salted Veal..... | — @ 10 | — @ 9 |
| Wet Salted Calf..... | — @ 11 | 9 @ 10 |
| Dry Hides..... | — @ 16 | — @ 13 |
| Dry Kip and Veal, 11 to 16 lbs..... | 14 @ 15 | — @ 11 |
| Dry Calf, under 4 lbs..... | 18 @ 20 | 16 @ 17 |
| Horse Hides, large..... | 2 25 @ 2 75 | — @ 2 50 |
| Horse Hides, medium..... | 1 50 @ 2 00 | — @ 1 75 |
| Horse Hides, small..... | 25 @ 50 | — @ 50 |
| Colts' Hides..... | 25 @ 50 | — @ 50 |
| Pelts, long wool, per skin..... | 90 @ 130 | — @ 90 |
| Pelts, medium, per skin..... | 70 @ 90 | — @ 70 |
| Pelts, short wool, per skin..... | 40 @ 70 | — @ 40 |
| Pelts, shearling, per skin..... | 15 @ 30 | — @ 15 |
| Deer Skins, best summer..... | 25 @ 30 | — @ 25 |
| Deer Skins, good medium..... | — @ 20 | — @ 20 |
| Deer Skins, thin winter..... | — @ 10 | — @ 10 |

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| | |
|---------------------------|------------|
| Elk Hides..... | 8 @10 |
| Tallow, good quality..... | 3 @ 3 1/4 |
| Tallow, No. 2..... | 2 @ 2 1/4 |
| Goat Skins, perfect..... | 20 @37 1/2 |
| Goat Skins, damaged..... | 10 @20 |
| Kid Skins..... | 5 @10 |

Honey.

The best grades of both Comb and Extracted are in moderate demand and command top figures more readily than do dark and inferior qualities the decidedly low prices current on the latter. Receipts have been lately of a light order, and indications are that there is not much Honey now remaining in the interior. Supplies in this center are not large.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 4 1/4 @ 5 |
| Extracted, Light Amber..... | 3 1/4 @ 4 |
| Dark Tule..... | 1 1/4 @ 2 1/4 |
| White Comb, 1-lb frames..... | 7 1/4 @ 9 1/2 |
| Amber Comb..... | 4 @ 6 |

Beehives.

Market is firm at former range of values, the demand being sufficient to absorb offerings at current rates as fast as presented for sale.

| | |
|-----------------------------|--------|
| Fair to choice, per lb..... | 22 @24 |
|-----------------------------|--------|

Live Stock and Meats.

Beef market is without quotable change, and it is now thought wholly improbable that higher prices will prevail this season. Mutton is bringing fully as good figures as were current the preceding week. Hog market is firm, especially for stock desirable for packing, and is likely to remain so for a month or more to come.

| | |
|---|---------------|
| Beef, 1st quality, dressed, net per lb..... | 6 @ 6 1/4 |
| Beef, 2d quality..... | 5 1/2 @ 6 |
| Beef, 3d quality..... | 5 @ 5 1/4 |
| Mutton—ewes, 60-64 lbs..... | 6 1/4 @ 7 |
| Hogs, hard grain fed, medium..... | 3 1/2 @ 4 |
| Hogs, small..... | 3 1/4 @ 4 |
| Hogs, large hard..... | 3 1/2 @ 3 3/4 |
| Hogs, soft and feeders..... | 3 1/4 @ 3 1/2 |
| Hogs, country dressed..... | 5 @ 5 1/4 |
| Veal, small, per lb..... | 6 @ 7 1/2 |
| Veal, large, per lb..... | 6 1/4 @ 7 |
| Lamb, per lb..... | 7 @ 8 |

Poultry.

Immediately following our last review the market for nearly all kinds of poultry was demoralized, there being a glut of offerings, brought about through anticipating a very active demand on account of the Golden Jubilee. But the demand did not come up to expectations. In connection with tolerably heavy arrivals of State and Oregon poultry, five carloads of Eastern were received inside of six days. It would have been phenomenal if the market under such extraordinarily heavy receipts would have been otherwise than sloppy. At the close the market was beginning to show signs of recovery, but was still far from being in a generally satisfactory condition.

| | |
|------------------------------------|-------------|
| Turkeys, dressed, per lb..... | 11 @ 13 |
| Turkeys, live hens, per lb..... | 10 @ 11 |
| Turkeys, live gobblers..... | 9 @ 10 |
| Hens, Cal., per doz..... | 3 00 @ 4 00 |
| Roosters, old..... | 3 50 @ 4 00 |
| Roosters, young, (full-grown)..... | 4 50 @ 5 00 |
| Fryers..... | 4 25 @ 4 50 |
| Broilers, large..... | 3 00 @ 3 50 |
| Broilers, small..... | 3 00 @ 3 50 |
| Ducks, young, per doz..... | 4 00 @ 5 00 |
| Ducks, old..... | 4 00 @ 5 00 |
| Geese, per pair..... | 1 25 @ 1 50 |
| Goslings, per pair..... | 1 25 @ 1 50 |
| Pigeons, Old, per doz..... | 1 00 @ 1 25 |
| Pigeons Young..... | 1 25 @ 1 50 |

Butter.

This market has been quite steady, both in prices and general tone, since our last report. In fact, there was a tendency to firmness. At almost any other time of year but the present, firmer prices would have been realized under existing conditions. With the new season just opening, however, it would be almost impossible to advance values materially, unless for a very brief period. It is not likely that present prices can long be sustained. At the same time, it is generally accepted as a fact by the best posted ones in the trade that prices the coming spring and summer will not touch as low levels as a year ago.

| | |
|-------------------------------------|-------------|
| Creamery extras, per lb..... | 26 @— |
| Creamery firsts..... | 25 @— |
| Creamery seconds..... | 24 @— |
| Dairy select..... | 22 1/2 @ 23 |
| Dairy seconds..... | 21 @ 22 1/2 |
| Dairy, soft and weedy..... | 20 @— |
| Mixed store..... | 15 @ 17 |
| Creamery in tubs..... | 22 @ 24 |
| Pickled roll..... | 20 @— |
| Dairy in tubs..... | 22 @ 23 |
| Firkin, Cal., choice to select..... | 22 @ 23 |
| Firkin, common to fair..... | 17 @ 21 |

Cheese.

This market is showing much the same condition as at date of previous issue. There is a fair movement, but considerably more demand than exists could be accommodated. While there is no evidence of firmness, values are not likely for some weeks to decline materially from present levels, as retailers and consumers cannot reasonably find fault with current prices.

| | |
|-----------------------------------|-------------|
| California fancy flat, new..... | 10 1/4 @ 11 |
| California, good to choice..... | 9 @ 10 |
| California, fair to good..... | 8 @ 9 |
| California Cheddar..... | 10 @ 11 |
| California, "Young Americas"..... | 10 @ 12 |

Eggs.

The general tendency of this market has been against the selling interest most of the current week. Quotable values declined 1 @ 2c per doz. from the figures given in last RURAL, and at the lower rates prevailing the market did not give evidence of any strength, although buyers took hold a little more freely than at any previous date since the downward movement in values began. It is believed that prices are now near the point where stability will be at least for a little while established.

| | |
|---|---------|
| California, select, large white and fresh..... | 22 @— |
| California, select, irregular color & size..... | 19 @ 21 |

| | |
|--|---------|
| California, good to choice store..... | 18 @ 19 |
| California, common to fair store..... | 17 @ 18 |
| Oregon, prime..... | 16 @ 17 |
| Held Eastern, as to section and grading..... | 15 @ 16 |
| Local Cold storage eggs..... | 14 @ 15 |

Vegetables.

The display of vegetables was quite limited, both as to quantity and variety, and is likely to so continue for a few weeks to come. For all offerings of good to choice quality the market is decidedly firm. Quotations remain about as last stated, but in some instances higher prices than below quoted are realized. There is considerable shipping demand for Cabbage and Cauliflower at the advanced figures ruling.

| | |
|--------------------------------------|---------------|
| Asparagus, per doz..... | 15 @ 30 |
| Beans, String, per lb..... | 14 @ 15 |
| Beans, Lima, per lb..... | 13 @ 14 |
| Beans, Refugee, per lb..... | 12 @ 13 |
| Beans, Wax, per lb..... | 11 @ 12 |
| Cabbage, choice garden, per 100..... | 70 @ 80 |
| Cauliflower, per doz..... | 60 @ 70 |
| Corn, Green, per sack..... | 10 @ 11 |
| Corn, Alameda, per crate..... | 10 @ 11 |
| Cucumbers, Alameda, per box..... | 10 @ 11 |
| Egg Plant, per lb..... | 10 @ 11 |
| Garlic, per lb..... | 2 1/4 @ 2 1/2 |
| Mushrooms, Buttons, per lb..... | 30 @ 35 |
| Mushrooms, Wild, per lb..... | 15 @ 20 |
| Okra, Dried, per lb..... | 12 @ 14 |
| Onions, Yellow, good to choice..... | 2 60 @ 2 75 |
| Onions, Yellow, cut..... | 1 75 @ 2 25 |
| Peas, Sweet, Garden, per lb..... | 6 @ 8 |
| Peppers, Green Chile, per lb..... | 15 @ 25 |
| Rhubarb, per box..... | 10 @ 12 1/2 |
| Squash, Summer, per lb..... | 75 @ 1 50 |
| Tomatoes, per box or crate..... | 75 @ 1 50 |

Potatoes.

A tolerably firm market was experienced for choice to select quantities of potatoes for both table and seed. The present demand is mainly for Burbank Seedlings for cooking, although there is some inquiry for Early Rose and one or two other early varieties for seedling, and inquiries for seed purposes will be more active in the near future. Inferior potatoes are meeting with slow sale at rather low prices. Sweet Potatoes were in slight receipt, but supplies were about sufficient for the demand.

| | |
|--|-------------|
| Early Rose, River, per cental..... | 60 @ 70 |
| Peerless, River..... | — @ — |
| Reds River..... | 37 1/2 @ 50 |
| Garnet Chile, Mission..... | 70 @ 1 00 |
| Burbanks, Salinas..... | 50 @ 75 |
| Burbanks, River..... | 50 @ 75 |
| Burbanks Petaluma and Tomales, per cu..... | 50 @ 85 |
| Burbanks, Oregon, per cental..... | 50 @ 90 |
| Garnet Chile, Oregon..... | — @ — |
| Sweet River, per cental..... | 50 @ 65 |
| Sweet Merced..... | 75 @ 90 |

The Fruit Market.

Fresh Fruits.

The Apple market is more lightly stocked than at any previous date since the current season fairly opened. Choice to select are especially in light supply and market for such stock is decidedly firm, with sales of very fancy qualities at an advance on top quotation, but transfers of this description are mostly in a small way. Fair to good apples, or medium grades, can hardly be said to be quotably bigger than at date of last review, but they are meeting with a little more attention than for some time previously, and sales at full current rates are becoming more frequent. Common and inferior apples have been pretty well cleaned out lately, regardless of prices obtainable. While the market is not at present very heavily burdened with offerings of last-named kinds, they are not salable to much if any better advantage than previously quoted. Most buyers, and especially of the best class of custom, will not take inferior fruit at any figure, no matter how scarce or high the better grades may be. If it comes to a question of inferior fruit or none, they prefer to go without. In the line of deciduous fruits there is nothing else offering, unless it be in a very small way, and which does not admit of giving quotations. The fact that outside of citrus fruit, apples stand alone in the present market, operates in favor of all desirable qualities meeting with fairly satisfactory custom.

| | |
|--------------------------------------|-------------|
| Apples, fancy, 4-tier, per box..... | 1 25 @ 1 40 |
| Apples, choice, 4-tier, per box..... | 7 @ 1 00 |
| Apples, fair to good, 50-lb box..... | 40 @ 75 |
| Apples, common to fair, per box..... | 20 @ 40 |
| Quinces, per box..... | — @ — |
| Figs, Black, 2-layer box..... | — @ — |
| Pears, Common, per box..... | — @ — |
| Pears, Winter Nellis, per box..... | — @ — |
| Persimmons, small box..... | — @ — |
| Strawberries, large, chest..... | — @ — |

Dried Fruits.

There have been no startling developments since last issue in the market for cured and evaporated fruits. Dealers report very little trade, in fact, nothing worthy of detailed mention. There continues to be active inquiry for Prunes, but it is the exception where buyers and sellers are able to agree on terms. Wholesale transfers at an advance on figures below quoted are out of the question, and some buyers deem this range of values too high, being willing to operate only at lower figures. On the other hand, some packers and growers are holding out for an advance on quotations, having hopes that the Klondike trade will relieve the market. Dried fruit orders for the Klondike region have not so far, however, included Prunes, and it is considered extremely doubtful about this fruit being taken later on for the extreme north. As bulk and weight have to be restricted as much as possible in shipments to the Klondike, on account of high freights and difficulties of transportation, the pits of the Prunes would prove a serious objection, even if this particular fruit was sought after on other grounds for shipment to the frozen regions of Alaska. There are no heavy supplies of other lines of fruit, and a generally hopeful view is entertained about the prospects for a clean-up in the spring months.

EVAPORATED OR BLEACHED.

| | |
|--|-----------|
| Apricots, Royal, in sacks, per lb..... | 5 1/4 @ 6 |
| Apricots, Royal, fancy..... | 6 1/4 @ — |

| | |
|--|---------------|
| Apricots, Moorpark..... | 7 @ 9 |
| Apples, in boxes..... | 7 @ 7 1/4 |
| Figs, fancy pressed..... | 8 @ 10 |
| Nectarines, White..... | 4 1/2 @ 5 |
| Nectarines, Red..... | 4 1/2 @ 5 |
| Peaches, unpeeled, choice..... | 4 1/2 @ 5 |
| Peaches, unpeeled, fancy..... | 6 @ — |
| Peaches, peeled, in boxes..... | 9 @ 12 |
| Pears, unpeeled Bartlett's, halved, fancy..... | 7 @ 8 |
| Pears, balled, unpeeled Bartlett's..... | 4 1/2 @ 6 |
| Pears, quartered, unpeeled Bartlett's..... | 4 @ 5 |
| Pears, peeled and sliced..... | — @ — |
| Plums, pitted..... | 4 1/2 @ 5 1/4 |
| Prunes, in sacks, 40-50's..... | 5 @ 5 1/4 |
| 50-60's..... | 3 1/4 @ 3 1/2 |
| 60-70's..... | 2 1/2 @ 3 |
| 70-80's..... | 2 1/4 @ 2 1/2 |
| 80-90's..... | 2 @ 2 1/4 |
| 90-100's..... | 1 1/2 @ — |

Above figures are on basis of 2 1/4 @ 2 1/4 c for 4 sizes. Prunes in boxes, 1/4 c higher for 25-lb boxes, 1/4 c higher for 50-lb boxes.
4 sizes Santa Claras and equal..... 2 1/4 @ —
4 sizes San Joaquin and Northern..... 2 1/4 @ 3 1/2
Prunes, Silver..... 5 @ 8

COMMON SUN-DRIED.

| | |
|-------------------------|-----------|
| Apricots, ordinary..... | 4 @ 5 1/4 |
| Apples, sliced..... | 3 1/4 @ 4 |
| Apples, quartered..... | 3 1/4 @ 4 |
| Figs, Black..... | 2 @ 3 1/4 |
| Figs, White..... | 3 @ 4 |
| Peaches, unpeeled..... | 3 @ 4 |
| Plums, unpitted..... | 1 @ 1 1/4 |

The condition of the dried fruit market on the Atlantic side is thus outlined by a New York authority under recent date:

The market has shown no material change this week. Evaporated apples are in light supply and held rather firmly though trade quiet. Some extra fancy have jobbed out at a premium over top quotation, but 8 1/2 @ 9c generally full for choice to fancy and 8 1/4 c continues the current rate for prime wood dried, with prime wire-dried 8c, rarely 8 1/4 c; lower grades have little attention. Sun-dried apples are in moderate supply and held steadily, but there is little demand. Chops occasionally held at 4c, though no important business above 3 1/2 c. Waste has had more attention and is higher; some business above top quotation. Cherries are firm but other small fruits dull, though offerings light and stock held steadily. California apricots and peaches firm, particularly the low grade fruit. California prunes also quite active and firm.

| | |
|--|---------------|
| Apricots, Cal. Moorpark, 1897, per lb..... | 7 @ 11 |
| Apricots, Cal. Royal, 1897, per lb..... | 5 1/4 @ 8 1/4 |
| Peaches, Cal., 1897, peeled, per lb..... | 10 @ 18 |
| Peaches, Cal., 1897, unpeeled, per lb..... | 5 1/4 @ 10 |
| Pears, Cal., 1897, per lb..... | 6 @ 10 |
| Prunes, Cal., 1897, per lb..... | 3 @ 8 |

Raisins.

There is no wholesale trade observable, and no change to record in quotable rates. Eastern buyers are making considerable inquiry, as for a fortnight or more preceding, but the basis of values on which they wish to operate is too low to admit of trading. Many of these Eastern handlers are looking more to price than to quality, but even admitting their willingness to accept off qualities, they are unable to secure the goods at their price. Current quotations are based mainly on holders' views.

F. O. B. FRESNO DELIVERY.

| | |
|--------------------------------------|-------------|
| Imperial Clusters, per box..... | — @ — |
| Dehesa Clusters, per box..... | — @ — |
| Fancy Clusters, per box..... | — @ — |
| Boxes, London layers, 20-lb box..... | 1 00 @ 1 10 |

(Usual advance for fractions.)

| | |
|--------------------------------------|---------------|
| Loose Muscatel, 4-crown, per lb..... | 4 @ — |
| Loose Muscatel, 3-crown..... | 3 1/4 @ 3 1/2 |
| Loose Muscatel, 2-crown..... | 2 @ — |
| Sultanas..... | 3 1/4 @ 4 |
| Seedless Muscatel..... | 2 @ 2 1/4 |
| Dried Grapes..... | 1 1/2 @ 2 |

Citrus Fruits.

Oranges were not in heavy receipt, but there were more than enough to accommodate the existing inquiry. Continued cold weather rendered it impossible to place large quantities of citrus fruit to consumers. Demand which existed for oranges was mainly for choice ripe stock, market for other kinds lacking firmness. Quotable values remained unchanged. Lemon market was quiet and easy, sales at top figures being confined mainly to the filling of small orders of the very best lemons obtainable.

| | |
|-----------------------------------|-------------|
| Oranges—Navel per box..... | 1 25 @ 2 50 |
| Seedlings..... | 75 @ 1 25 |
| Lemons—Cal., select, per box..... | 2 00 @ 2 25 |
| Cal., good to choice..... | 1 00 @ 1 50 |
| Cal., common to good..... | 50 @ 1 00 |
| Limes—Mexican, per box..... | 4 00 @ 5 00 |
| Cal., small box..... | 75 @ 1 00 |
| Grape fruit, per crate..... | — @ — |

Nuts.

Market presents a fairly steady tone, but is exceedingly quiet. Almonds are in light stock, and in a jobbing way are commanding above quotations. Some speculative inquiry has been lately reported in Walnuts, but only at desirably low figures. Quotations remain unaltered.

| | |
|--------------------------------------|-----------|
| California Almonds, paper shell..... | 7 @ 7 1/4 |
| California Almonds, soft shell..... | 5 @ 6 |
| California Almonds, hard shell..... | 3 @ 3 1/4 |
| Walnuts White, paper shell..... | 6 @ 6 1/4 |
| Walnuts White, soft shell..... | 6 @ 6 1/4 |
| Walnuts White, Cal., standard..... | 5 @ 6 |
| Chestnuts, Cal. Italian..... | 7 @ 8 |
| Peanuts, Cal., fair to prime..... | 4 @ 4 1/4 |
| Peanuts, Eastern hand-picked..... | 5 @ 6 |
| Pine Nuts..... | 7 @ 8 |

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|--------------------|--------------------|----------------------|
| Flour, 4-sks..... | 66,975 | 2,850,864 |
| Wheat, cts..... | 123,665 | 7,636,643 |
| Barley, cts..... | 4,685 | 3,023,588 |
| Oats, cts..... | 8,845 | 418,341 |
| Rye, cts..... | 2,375 | 302,402 |
| Beans, sks..... | 10,688 | 424,015 |
| Potatoes, sks..... | 30,388 | 683,206 |
| Onions, sks..... | 2,228 | 77,068 |
| Hay, tons..... | 2,132 | 83,314 |
| Wool, bales..... | 299 | 48,842 |
| Hops, bales..... | 24 | 7,292 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------|--------------------|----------------------|
| Flour, 4-sks..... | 79,324 | 1,824,308 |
| Wheat, cts..... | 150,442 | 7,630,733 |
| Barley, cts..... | 5,755 | 2,603,268 |
| Oats, cts..... | 51 | 11,143 |
| Beans, sks..... | 1,080 | 27,177 |
| Hay, bales..... | 991 | 244,801 |
| Wool, lbs..... | 3,233 | 52,709 |
| Hops, lbs..... | 12,740,776 | 6,442,249 |
| Honey, cases..... | 3 | 714,501 |
| Potatoes, pkgs..... | 477 | 152,852 |

California Dried Fruit at New York.

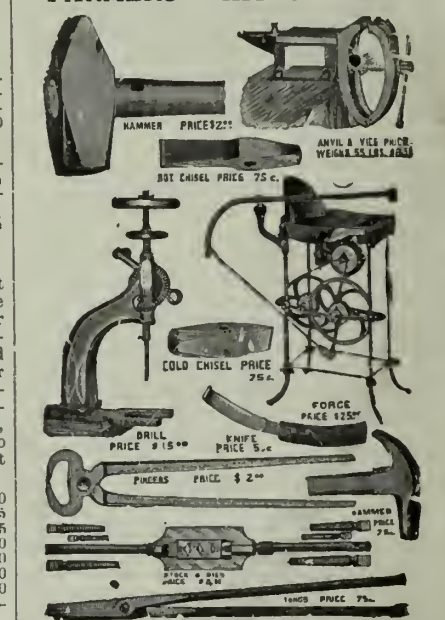
NEW YORK, January 28.—California dried fruits, steady. Evaporated Apples, common, 5 @ 7 1/4 c per pound; prime wire tray, 8 1/4 c; wood dried prime, 8 1/4 c; ch-lce, 8 1/4 c; fancy, 9 @ 9 1/4 c. Prunes, 3 @ 8 c per pound. Apricots, Royal, 7 @ 8 1/4 c; Moorpark, 9 @ 11 c. Peaches, unpeeled, 7 @ 10 c; peeled, 12 @ 20 c.

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Patrons of Husbandry.

Tulare Grange.

At the last meeting of Tulare Grange, Mr. C. J. Berry read a well-written paper, "Some Facts for Boys and Girls to Know."

It was an interesting account of a visit to the Lick School of Mechanical Arts, in San Francisco. Principal, George A. Merrill. From Brother Berry's description of the school, the industrial education is the object of the school, the literary education is the incident. The school seems to be fully preparing boys and girls for their work of life. It gives a four years' course. During the first two years, boys and girls are not taught a special course, but their work is judged, and for the second two years a special course is allowed in that course of industrial calling for which the student has shown taste, skill and fitness. Bro. Berry recommends parents who have boys and girls for whom they desire a practical, industrial education, to write to Mr. George A. Merrill, principal of the school, for circular, and to visit the school and see its practical workings.

A very enjoyable lunch was then had. After lunch, Prof. Fowler, Organizer of Farmers' Institutes, visited the Grange, and was formally introduced. Prof. Fowler spoke at length on the work of the Grange and of the scope of its work, also of the Farmers' Institutes held this season, and of the interest taken in their proceedings by the farmers. Of the desire the Regents of the U. C. have to promote agricultural education and the interests of agriculture in California, until it comes to be, as it is capable of being, and as it should of right be, the best educated and greatest agricultural State in the Union. A discursive consideration of these subjects was entered into between Bro. Fowler, the Worthy Master and members of the Grange, so interesting that the usual hour of adjournment passed long before the Grange did adjourn. The Grange enjoyed Bro. Fowler's visit, learned something of the intentions of the Board of Regents of the U. C., and tried to convey to Bro. Fowler some idea of its own earnest desire to aid in promoting a better agricultural education in California.

The following officers were installed for the ensuing year: Bro. Thos. Jacob, Worthy Master; Bro. Mull, Overseer; Bro. Tuohy, Lecturer; Bro. E. C. Shoemaker, Steward; Bro. Frank Styles, Asst. Steward; Sister Styles, Chaplain; Bro. Julius Forrer, Treasurer; Bro. C. J. Berry, Secretary; Bro. A. J. Woods, Gate Keeper; Sister Kate Mull, Pomona; Sister Sara Gill, Flora; Sister C. J. Berry, L. A. Steward; Bro. P. P. Styles, Trustee. Sister Emma F. Zumwalt had been elected Ceres, but the sickness of her husband prevented her attendance.

The Worthy Lecturer announced he had received the National Grange Quarterly Bulletin for the present quarter and read the special subjects suggested for subordinate Grange consideration, the subjects being: For January—"Postal Savings Banks," "Co-operation," "Free Delivery of Mail in Rural Districts," For February—"Transportation," "Powers of the Interstate Commerce Commission," "Adulteration of Drug and Food Products," For March—"Arbitration," "Election of U. S. Senators by a Direct Vote of the People," "Fraternity." The Bulletin gives, also, many supplementary subjects, amongst them: "To What Extent are Farmers Led by Professional Politicians?" "Would 'Bossism' in Politics be Eliminated by Woman Suffrage?" "Which Affords Greater Happiness in Farmers' Families—Luxuries in Dress or in Food?" "Is the Agricultural College Education More Needed by the Farmer's Boy Than his Girl, and Why?" "How Can Roads in this Section be Improved Without greatly Increasing the Rate of Tax-

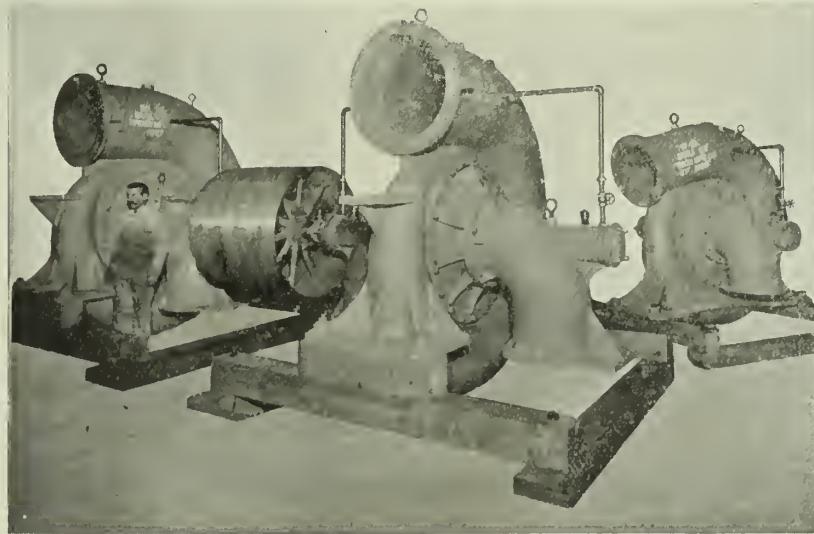
ation?" "What Can the Grange do to Encourage Nature Studies in Our Common Schools?" "Is Money Loaned at Less Than 4 Per Cent Interest 'Cheap' or 'Dear' Money?"

The National Lecturer having asked for a description of a "model Grange," not later than the 1st of March, the Lecturer announced that at the next meeting of Tulare Grange he will ask every member for his views of what constitutes a "model Grange."

J. T.

A Great Reclamation Plant.

The cut herewith represents three large centrifugal pumps, two of which belong to a pumping plant furnished by the Krogh Manufacturing Co., this city, to the Old River Land and Reclamation Co. of Stockton, and at present in course of erection on Union island,



CENTRIFUGAL PUMPS BUILT BY KROGH MFG CO.

San Joaquin county. The tract upon which this plant is now located embraces nearly 17,000 acres of the richest land in the State, and is situated near Bethany. As that portion of this extensive area during the rainy season was inundated in places, it is readily understood that to raise levees and drain such land is no easy, everyday undertaking, and hence required considerable engineering skill, besides large capital, to overcome the many and apparently insurmountable obstacles. But Mr. J. W. Ferris, consulting engineer, was equal to the task.

The Krogh Manufacturing Co. has designed and built this pumping plant according to the suggestions advanced by the engineer named, and the foundation of all the machinery pertaining to the plant is embodied in a floating barge 60 feet long, 40 feet wide and 5 feet deep. The twin pumps seen in the engraving are bolted to a series of iron beams projecting about 12 feet beyond one end of the barge, and from the pumps four big suction pipes lead into the water. The combined capacity of the pumps is about 4,000,000 gallons per hour, and this immense volume of water is discharged into the river through about 100 feet of 50-inch diameter iron pipe, extending through the top of the levee. The outlets of the pumps are connected to this huge pipe by two smaller pipes, which have four ball and socket joints and two slip joints, so arranged that the barge, encumbered by its mighty motive power, can rise and fall according to the changing water levels within a vertical range of 13 feet, without the least strain or injury to any of the pipes.

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Professor of Agricultural Practice in the University of California; Author of "California Fruits and How to Grow Them;" President of the California State Floral Society; Horticultural Editor of the "Pacific Rural Press" of San Francisco, etc.

LARGE OCTAVO; 336 PAGES; 12 FULL-PAGE PLATES.

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| III. California Climate as Related to Vegetable Growing. | XXII. Eggplant. |
| IV. Vegetable Soils of California. | XXIII. Lettuce. |
| V. Garden Irrigation. | XXIV. Melons. |
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| X. The Planting Season. | XXIX. Radishes. |
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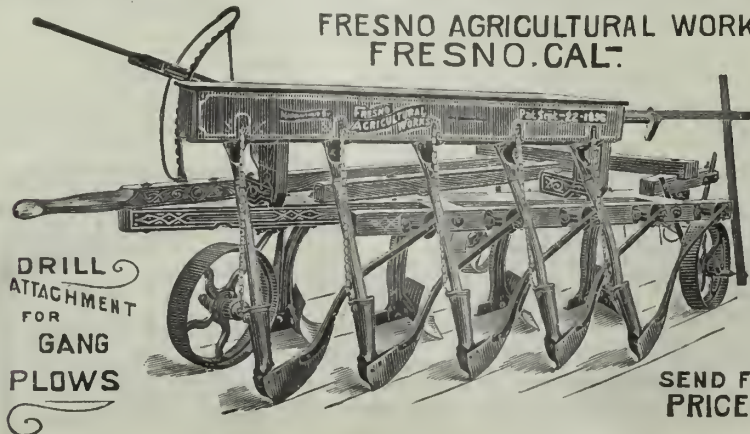
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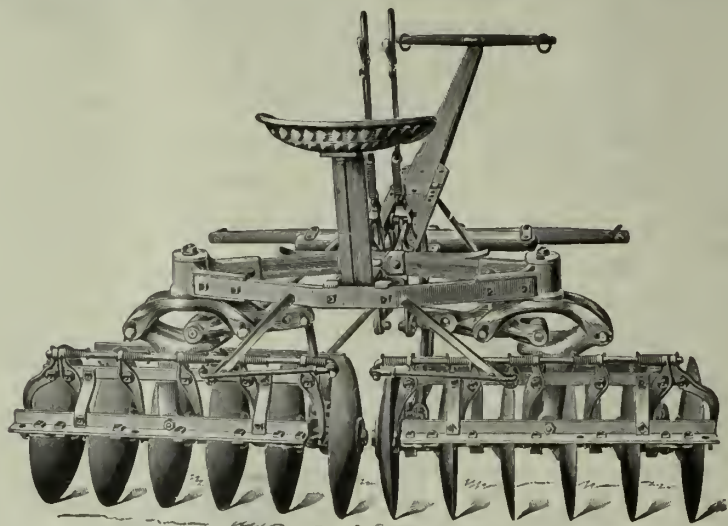


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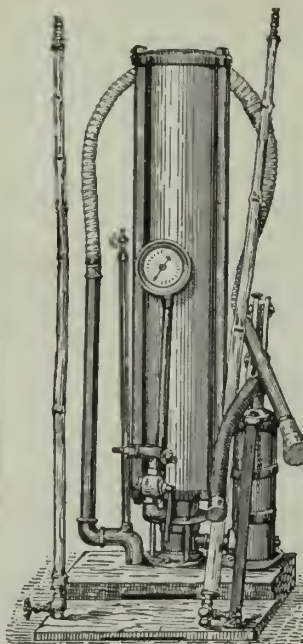
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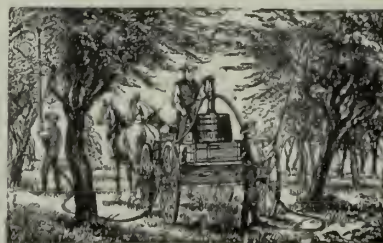
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 6.

SAN FRANCISCO, SATURDAY, FEBRUARY 5, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

The Herefords.

The achievements of the Herefords in winning such wide popularity as they now enjoy in the comparatively short period, since their qualities were first adequately made known to American stockmen, are indisputable evidence that they are as a breed well adapted to both our range and feed-lot conditions. It is hardly a quarter of a century, if we remember correctly, since T. L. Miller of Illinois undertook to demonstrate Hereford value in this country, where for half a century Shorthorns had stood as ideals of perfection and the prominence of the "Whitefaces" everywhere to-day betokens a quick recognition of which even the most enthusiastic friends of the breed could hardly have cherished a dream. We count this popularity a clear evidence of the general growth of the country in appreciation of fine stock, for it does not appear that the dissemination of Herefords has been accomplished by the displacement of Shorthorns. It simply has acted as a spur and stimulus to effort against the scrub, and Shorthorns and Herefords have advanced in popularity on this issue.

The Hereford as a beef animal has demonstrated marked adaptations to American range conditions, and has perhaps won notable victories in these directions. Mr. A. H. Sanders of the *Breeders' Gazette* holds that the success of the Herefords was due to their more recent coming from the land of their origin.

We are not ready to admit that America must trust to the British breeders to maintain the standard of excellence even in the breeds which originated on English soil. In fact, we believe that it would not be hard to prove that Americans have added to the desirable characters which the English breeders made dominant by their long and faithful work. Still, there may be reasons for still introducing home-bred specimens, and for that reason enterprising and honest importers are worthy of credit and attention. Of such character, we believe, is the offering of recently imported Herefords on March 2nd and 3rd by C. S. Cross of Sunny Slope, Emporia, Kansas, and

the portrait on this page shows an animal from his herd. She is certainly a fine Hereford and a weighty argument.

Mr. Burbank's New Walnuts.

Our distinguished originator of horticultural novelties, Mr. Luther Burbank of Santa Rosa, has just issued the 1898 supplement to his "New Creations in Fruits and Flowers," which has world-wide reputation as the birth register of some of the finest varieties now known to horticulture. The supplement contains a number of new things which Mr. Burbank will offer in such a way that they become available for trial by all. The list includes three new plums of which we expect to speak at another time. There are also two new hybrid walnuts which are so striking in their characters that we present views of them on this page. The nut "Paradox" is a cross between the English walnut and the California Black walnut. Mr. Burbank produced this cross as early as 1888. We have seen the trees on his grounds and quite sympathize with his description of the tree as one of the most interesting and valuable hybrids produced among walnuts, surpassing all others in rapidity of growth, size of foliage and beauty of form. The hybrid grows twice



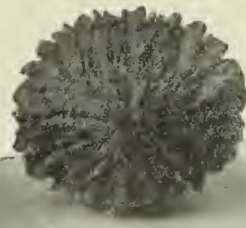
"PARADOX."



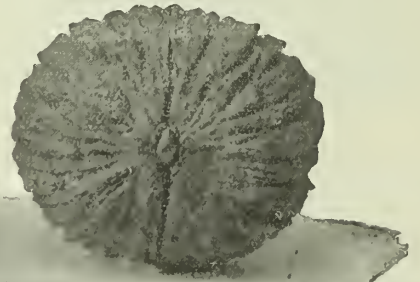
"ROYAL" IN THE HUSK.



JUGLANS CALIFORNICA.
Staminate Parent.



JUGLANS NIGRA.
Pistillate Parent.



HYBRID WALNUT—"ROYAL."
All Life Size.

THE HYBRID WALNUT—"ROYAL."

as fast as the combined growth of both its parents. The leaves, which are often from two feet to a full yard in length, are clean cut, glossy, bright green and have a surpassing sweet odor. The bark is thin, smooth, light gray, with marblings of white; the wood is very compact, with lustrous silky grain, taking a beautiful polish. Like many true hybrids, though blossoming freely every season, it bears but a few nuts, but is easily budded or grafted on thrifty young Black walnuts. As an ornamental and timber tree it is peerless.

The other walnut is named the "Royal." It is a cross of the Eastern and California black walnuts. It produces nuts in abundance and of the largest size, as may be seen from the life-size photo-engravings. The quality, also, is very much superior to that of either parent.

The meat, which is very large and parts more readily from the shell, has none of the disagreeable strong taste of the common American black walnut, and much more sweetness and character than the California black walnut.

In foliage, growth and general appearance the characteristics of both parents are about equally combined in the hybrid. Bearing nuts when young, and abundantly as it does, a promising new field is opened for producing still other variations.



A HEREFORD OF THE SUNNY SLOPE HERD OF C. S. CROSS, EMPORIA, KANSAS.

PACIFIC RURAL PRESS.

Office, Clark Building No. 330 Market St., San Francisco, Cal.
Telephone, Clay 204.

TWO DOLLARS PER YEAR IN ADVANCE.
Advertising rates made known on application.

Any subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

Registered at S. F. Postoffice as second-class mail matter.

ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, February 5, 1898.

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The Week.

Weather and Crops.

As a rule things are going along bravely, considering the trying weather conditions of the year up to this time. There are localities where the drouth-effects are well nigh as bad as they can be, but there are much greater areas where crops are holding on well and will be brought through in good shape if moisture comes soon, as indications are continually promising. There are considerable areas where growth is progressing finely and the fullest outcome is expected. California has such diversity of local conditions that such difference in present crop outlooks is to be expected. There have been showers here and there during the week, too light as a rule to be satisfactory, but still great helps to patient waiting both in plants and men. There is still time to make the year one of great productiveness, and the comfort is that there have been years in which just this has occurred.

The following data for the week ending 5 A. M. Wednesday, Feb. 2, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week... | Total Seasonal Rainfall to Date... | Total Seasonal Rainfall to Same Date... | Average Seasonal Rainfall to Date... | Minimum Temperature for the Week... | Maximum Temperature for the Week... |
|----------------------|--------------------------------|------------------------------------|---|--------------------------------------|-------------------------------------|-------------------------------------|
| Eureka..... | .18 | 18.86 | 28.24 | 25.07 | 34 | 64 |
| Red Bluff..... | .62 | 7.22 | 15.94 | 15.35 | 30 | 60 |
| Sacramento..... | .26 | 5.62 | 11.55 | 11.68 | 30 | 58 |
| San Francisco... | .20 | 5.39 | 14.64 | 13.95 | 37 | 57 |
| Fresno..... | .01 | 2.30 | 7.18 | 5.71 | 28 | 70 |
| San Luis Obispo... | .10 | 2.96 | 14.64 | ... | 34 | 74 |
| Los Angeles..... | .02 | 3.77 | 11.00 | 9.35 | 32 | 70 |
| San Diego..... | .12 | 3.32 | 7.79 | 5.40 | 36 | 64 |
| Yuma..... | .16 | 1.26 | 4.81 | 2.22 | 36 | 68 |

Cattle from Mexico.

A Washington dispatch of Jan. 29th says that the remarkable growth of exports of Mexican cattle to the United States forms the subject of a report to the State Department from United States Consul Kindrick at Ciudad Juarez. He says that while it was supposed the large exports were attributable to a desire to forestall the increased duties carried by the Dingley act, yet this has proved to be erroneous, for the trade goes on increasing steadily, while many cattlemen have exhausted their herds and all have realized handsomely.

Oregon Growers Will Resist.

Fruit men of Benton county, Oregon, have determined to test the rule which requires shippers to make up the deficit when sales in the East do not bring enough to pay charges of shipment, commis-

sions, etc. To that end they have declined to pay such back charges on this past season's shipments and will contest the matter in the courts with the Earl Fruit Co. It is a hard fact, but it is probably one which the Oregonians will have to accept, that the grower must either accept all the responsibilities or stay out of the Eastern market. California growers have had their experience in the matter and, distasteful as it is, they accept their "red ink" statements as a matter of course. Last season's shipping business was particularly disastrous to Oregon fruit men, those who got any return for their fruit being comparatively few. The feeling is universal that Oregon's only hope for profit lies in canning or drying its product.

The Local Produce Markets.

The San Francisco produce market presents no new or striking features as compared with one week ago. Wheat is a trifle higher. Barley is stiff. Oats are firm. Hay and all kinds of feed are strong and higher. No change in beef. Mutton is higher. Hogs hold their own in spite of heavy arrivals. Dry hides are higher.

In dried fruits there is rather more doing, but prices practically are unchanged.

For particulars see our market report.

Proposed National Anti-Pest Law.

Congressman Barlow Submits It for the Consideration of Rural Readers.

TO THE EDITOR:—I enclose you a copy of a bill that I have introduced in the interests of the great fruit interests of the State, and I would like to have the readers of the PRESS get the full text of the measure through its columns. I have secured favorable reports from both the House and Senate committees and feel sure that we will pass the same, that is, almost sure. I send you a list of some of the prominent men who have endorsed the bill. Trusting that you will give this matter the attention that its importance entitles it to, I have the honor to remain,

C. A. BARLOW.

House of Representatives, Washington, D. C., Jan. 26.

THE PROPOSED LAW.

A bill to provide rules and regulations governing the importation of trees, plants, shrubs, vines, grafts, cuttings, and buds, commonly known as nursery stock, and fruits into the United States, and rules and regulations for the inspection of trees, plants, shrubs, vines, grafts, cuttings, and buds, commonly known as nursery stock, grown within the United States, which become subjects of interstate commerce or exportation.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be unlawful for any transportation company, after October first, eighteen hundred and ninety-eight, to offer for entry at any port in the United States any trees, plants, shrubs, vines, grafts, cuttings, and buds, commonly known as nursery stock, unless accompanied by a certificate of inspection by a government official of the government from which the exportation was made, which certificate shall be made in the manner and form prescribed by the Secretary of Agriculture, certifying that the contents have been examined and found apparently free from all insect and fungous diseases dangerously injurious to nursery stock. In case any nursery goods are offered for entry without said certificate, it shall be the duty of the collector to refuse to accept them for entry, and shall not allow them to pass within the jurisdiction of the United States. And after the aforesaid date, October first, eighteen hundred and ninety-eight, all nursery stock imported in accordance with the aforesaid regulations shall be free from all inspection, quarantine, or restrictions in interstate commerce.

SEC. 2. That whenever it shall appear to the Secretary of Agriculture that any variety of fruit, grown outside of the United States or District of Columbia, is being, or is about to be, imported into the United States or the District of Columbia, and such variety of fruit is infested by any seriously injurious insect or disease, and which insect or disease is liable to become established in the United States and seriously affect any variety of fruit grown therein, he shall have authority to quarantine against any such variety of fruit and prevent the importation of the same until such time as it may appear to him that any such insect or disease has become exterminated in the country whence such fruit is being, or about to be, imported, when he may withdraw the quarantine; and this shall operate to relieve all such fruit from further quarantine or restrictions, so long as the conditions of freedom from seriously injurious insect or disease shall continue.

SEC. 3. That all trees, plants, shrubs, vines and buds, commonly known as nursery stock, grown within the United States, may become subjects of interstate commerce under the rules and regulations as hereinafter provided. The Secretary of Agriculture shall cause to be inspected by a qualified entomologist all trees, plants, shrubs, vines and buds, known as nursery stock, which are subjects of interstate commerce, and which are about to be transported from one State or Territory or the District of Columbia into another State or Territory or the District of Columbia. This examination shall be made prior to September first of each year, in the manner provided for and prescribed by the Secretary of Agriculture; and if such nursery stock is found to be apparently free from dangerously injurious insects or diseases, the certificate of the officer making such examination and finding shall be issued to the owner or owners of such nursery stock, a copy of which certificate shall be attached to and accompany each carload, box, bale or package, and when so attached and accompanying shall operate to release all such nursery stock from further inspection, quarantine, or restriction in interstate commerce.

SEC. 4. That it shall be unlawful for any person, persons or corporation to deliver to any other person, persons or corporation, or to the postal service of the United States (except for scientific purposes or by permission of the Secretary of Agriculture), for transportation from one State or Territory or the District of Columbia to any other State or Territory or the District of Columbia, or for exportation to any foreign country, any trees, plants, shrubs, vines, or other nursery stock

which have not been examined in accordance with the provision of section three of this Act, or which on said examination have been declared by the inspector to be dangerously infested with injurious insects or diseases. Any person, persons, firm or corporation who shall forge, counterfeit or knowingly alter, deface or destroy any certificate or copy thereof as provided for in this Act and in the regulations of the Secretary of Agriculture, or shall in any way violate the provisions of this Act, shall be deemed guilty of a misdemeanor, and on a conviction thereof shall be punished by a fine not to exceed five hundred dollars nor less than two hundred dollars, or by imprisonment not to exceed one year, or both, at the discretion of the court.

SEC. 5. That the rules and regulations herein provided for shall be promulgated on or before the first day of July of each year.

SEC. 6. That the sum of one hundred thousand dollars, or so much thereof as may be necessary, is hereby appropriated, out of any moneys in the Treasury of the United States not otherwise appropriated, to carry into effect the provisions of this Act.

SEC. 7. That this Act shall take effect on and after the thirtieth day of June, eighteen hundred and ninety-eight.

Some of the endorsers of the above measure are: C. H. Watrous, President of the American Pomological Society; F. M. Webster, Ohio State Entomologist; M. Rouse, President American Association of Nurserymen; Wm. B. Alwood, Chairman Executive Committee National Fruit Growers' Convention; W. G. Johnson, Maryland State Entomologist; E. M. Wardall, Representative California Horticultural Society; Silas Wilson, ex-President American Association Nurserymen; James Wilson, Secretary of Agriculture (one of its strongest supporters).

Note and Comment.

GLUCOSED HONEY.—A former Redlands man, now living in the East, writes back that so-called California honey sold in the Eastern market is so adulterated with glucose as to damage the reputation of the State. In printing this complaint the Redlands *Citrograph* says: "We can assure the writer that the honey he purchased, and which showed glucose upon analysis, that the glucose was put in it after it had arrived in the East. California apiarists and dealers do not use glucose. We are not claiming that Californians are so much more honest than their trade brethren elsewhere, but the fact remains that there is no glucose made on this coast, and that the Eastern cost, with the transcontinental freight added, together with the cost of packages, renders its use in adulterating honey impracticable.

"We have thought for years that there could be a big business built up in the East by some one who would buy California products in carload lots, pack attractively and honestly, put the California pure food law—in substance—on the labels or wrappers, and then sell under an absolute guarantee, catering mostly for the best class of trade only. Of course, straight, pure goods would cost more than trash, but there is a large class in the East who are willing to pay for pure goods. As to California wine, the same remarks apply to that as to honey. Pure grape juice in California is cheaper than any imported adulterant can possibly be. All adulterated wine is doctored in the East—not here. All one has to do is to buy in California, of reputable California dealers, and one is perfectly safe."

AMERICAN HORSE INDUSTRY.—It is universally believed by men engaged in the horse trade that this country will soon experience a horse famine. Mr. Berry, the leading horse dealer of Chicago, in a public address, declared recently that in the districts once famous for fine horses, the number of young animals is not one-tenth of what it was. In the Middle West it is now the hardest kind of work to pick up really first-class horses. All the markets are crowded with foreign buyers looking for good stock. These statements are fully borne out by the official publications of the Agricultural Department at Washington. This country in 1897 exported 39,532 horses and 7473 mules, the total value of which was \$5,314,000, making a rather important item of foreign trade. The exports of horses have increased over fivefold since 1893. There were never so many as 5000 sent abroad prior to that year. There were 14,364,000 horses and 2,215,000 mules in the United States on January 1, 1897—a decrease of nearly 2,000,000 horses and 100,000 mules as compared with the number in 1893—but an increase of 4,000,000 horses and 400,000 mules since fifteen years ago.

IMPRATICABLE BENEVOLENCE.—The plan of settling unemployed city families in the country, recently set on foot in this State by the Salvation Army, is to be tried on a much larger scale in connection with the so-called "abandoned" lands of New England. It is estimated that there are 1,200,000 acres of unused farming lands in Massachusetts, New Hampshire, Vermont and Connecticut, and a company has been formed to buy them up and resell them on such terms as will attract the surplus population of large cities. The project is primarily a benevolent one, but it is proposed to make it commercially profitable in the long run. An imposing list of approvers and contributors to the scheme is published, including the names of John Wannamaker, Ballington Booth, Nathaniel Roseman

and others, but we fail to note any name connected with practical agriculture. And there is good reason for it, because practical men know that it is idle to expect the unemployed of the cities to succeed where skilled Yankee farmers have failed. The so-called abandonment of New England farms is due to the pressure of products from more fertile and more easily worked lands in the West under modern systems of speedy and cheap transportation. The New England farmers have been unable to meet the Western competition, and it is not reasonable to expect that a new set of farmers, recruited from the city slums, will be able to do better. The project, like that of the Salvation Army in California, is based upon the absurd notion that any sort of a man is good enough for a farmer.

CALIFORNIA FARMERS ARE AHEAD.—It ought to interest those who are forever grumbling about the California farmers as "slow," that in the opinion of men really competent to judge, our farmers are more progressive than those of any other State or country and that they are notably ready to learn and apply scientific principles and methods. Anybody who has observed the evolution of fruit growing, raisin making, wine making, the changed methods of vegetable growing and the recent substitution of the creamery for the old-style dairy, ought to know this without special reminder; and it would seem hardly necessary to prove by high authority what is so commonly manifest. Speaking on this subject, and with special reference to artificial fertilization, Prof. Hilgard recently said: "In the Middle West it has taken forty or fifty years to convince the farming population that if productive agriculture is to continue, returns to the soil in the shape of fertilizers must be made, while in California the farmers have taken hold of fertilizing. They have been, and now are, fertilizing lands freshly taken into cultivation, and of enormous native fertility, because at times these lands would not produce the wished-for crop. In California crop shortage is, in a great number of cases, and also invariably in new lands, simply a sign that some physical disability, usually in the substrata, prevents the utilization of the soil's richness, so that to add more is wholly ineffective. This 'fertilizing mania' causes the useless expenditure of a great deal of money but it is greatly preferable to the 'skinning of the land' that has actually devastated some of the finest agricultural regions, notably of the cotton States. The most thorough misapplication of fertilization, in the ordinary sense, occurs in the case of alkali lands, which suffer from excess rather than from lack of plant food, and require a wholly different mode of treatment, which has been carefully developed by the California Experiment Station.

"In the repression of insect pests California fruit growers have been most energetic, as their exposure to the direct importation of all the world's pests required. The spray pump is nowhere, probably, in such universal use. Where sprays failed, fumigation in the gas tent has become an accepted fact, and the demand for colonies of insect-destroying beetles and parasites, both animal and vegetable, is a steady one; as indeed is that for improved processes of all kinds."

AGRICULTURAL REVIEW.

CALIFORNIA.

Contra Costa.

BAD WEATHER FOR STOCK.—Stock is suffering to a very large extent, and, should there be no abatement, the price of beef, butter, etc., will reach a very high figure. Owing to the scarcity of feed in the hills, stockmen are now driving their cattle down into the valleys and lowlands in the hope that some little feed can be picked up to tide them over until the rain begins to fall in abundance. With hay selling at \$20 a ton, and scarce at that, it is hard to forecast what is going to become of the stock. Noakes & Hough, our local butchers, are sufferers by the continued cold snap, and are driving their cattle into the valley for shelter, for, as they say, to leave them in the hills much longer would be a great loss. The weather California has experienced this season surpasses the memory of man, and it is the earnest prayer of all that rain is not far distant.—Antioch Ledger.

Fresno.

THE ORANGE INDUSTRY.—The culture of the orange in this portion of Fresno county has progressed until it is no longer an experimental question. As an evidence of what can be accomplished in this industry at this place, we need only mention the success of the Mount Campbell orchard, north of Reedley. The grove covers nine acres, and, although the trees are young, the oranges therefrom brought \$325, or \$92 per acre this year. The oranges were of the best. They were ripe long before the frosts came—in fact, they were marketed and probably consumed before then.—Reedley Exporter.

LARGE IRRIGATION ENTERPRISE.—The Enterprise Land and Canal Company is pushing the construction of a canal from the San Joaquin river at Sycamore point to a point near Jamison, a few miles west of Mendota, in this county. The canal, which will be about thirty-five miles long, will run fifteen miles south from Sycamore point, then west five miles, then north to the fertile land around Jamison, where an immense acreage will be planted in wheat. It is estimated that the acreage to be sown in wheat on the James property alone will exceed 12,000 acres; and as part of this acreage is already well irrigated from the Kings river by the way of Fish slough and Fresno slough, the outlook is for a very heavy output of wheat on the west side this year. The soil is quite soft, and the construction of the canal is proceeding with great rapidity.—Fresno letter.

Kings.

CANNERY PROPOSITION.—J. Fontana, the well known fruit packer, is dealing with the Hanford people, looking to the establishment of a cannery. He wants a site 200x600 feet, and

a guarantee of 1000 tons of fruit for the first year, made up of 700 tons of yellow cling peaches, 100 tons of white clings, and say 200 or 300 tons of pears. If this guaranty in made a \$25,000 plant will be in time for the coming season. "The capacity of this plant," says the Hanford *Sentinel*, "will be such as will conveniently handle all the fruit of various kinds raised here that is fit for canning. The most available canning products here are peaches, pears, apricots, and perhaps blackberries. This locality excels in peaches and pears. Such a plant as the company would erect here would probably put up 75,000 cases canned fruit the first season. That would employ about 550 hands for a period from when apricots begin to be fit for canning to along in September."

Los Angeles.

MYSTERIOUS STOCK DISEASE.—A strange disease has appeared among cattle and stock in the regions of Glendale, Verdugo canyon and Monte Vista, having all the symptoms of hydrophobia. The cattle are killed as soon as the disease is apparent. This state of affairs has now been going on for a couple of weeks and already five milch cows, a horse, a goat and several dogs have been killed. At Glendale and Verdugo canyon a similar state of affairs exists and the trouble appears to be spreading, notwithstanding the efforts to stamp it out. From the developments it is thought that a Los Angeles dog of fox terrier breed went to Monte Vista by way of Glendale and Verdugo canyon. This week after the cattle had been going mad for some days, John Kirkman, a Monte Vista farmer on going to his barn, saw the dog snapping at a cow and killed it. People think the cause is now removed. There is considerable excitement however, because of the fact that milk from the diseased cows has been in daily use. For the past couple of weeks the killing of cows has been a matter of every few days. A heretofore gentle homine would run amuck and a posse armed with rifles would follow and kill her. It has been a popular fallacy in California that no hydrophobia exists west of the Rocky mountains, and there is talk of asking the State health authorities to make an official examination.—Redlands Record.

Napa.

GOOD ROADS IN NAPA COUNTY.—The Santa Rosa *Democrat* thus remarks upon the Napa county road system: "Napa county has the boss roads. After passing over the dividing line between Sonoma and Napa counties, on the Napa side the roads commence to improve. From Calistoga to St. Helena, a distance of nine miles, the road is as smooth as a bituminous pavement. A buggy with ordinary tires runs along as smoothly as if it had cushion tires. Every mile or so there is a water tank by the side of the road for road-sprinkling purposes. Each mile of the way is marked by a neatly painted milestone, and every cross road has its neat fingerpost indicating the direction to be traveled. This system of milestones and fingerposts is general in Napa county and are a great convenience to the traveling public. Of course, it is said that Napa county has been longer in the business of road building, but at first start the county saw the advantage of providing permanent roads and permanent stone bridges."

Orange.

THE GREAT SAN JOAQUIN GRAIN RANCH.—While the harley crop on the great San Joaquin ranch was not so large in 1897 by 75,000 sacks as in a former year (that of 1894), yet it exceeded the crop of 1896 by fully 100,000 sacks, and in a financial way is the greatest success ever scored by the grain raisers of Orange county. A correspondent of the Santa Ana *Blade* says: "There was in all about (in round numbers) 450,000 sacks of grain raised, and of this amount 60,000 was wheat of No. 1 quality. This was the first wheat raised in large amounts, and the yield, quality and price being good, the results were most satisfactory. There was also a large amount of beans raised, the exact or approximate amount not being at hand. This crop, like the popcorn, peanuts and beets, was in the line of an experimental crop. James Irvine, the proprietor of the ranch, is very desirous of having a diversity of crops raised, but the old grain raisers do not take very kindly to the picking of peanuts and pulling of beans, and would gladly leave these small crops to small farmers. A number of the old ranchers have dropped out after a successful year, and their places have been filled with new men or their holdings apportioned among others of the tenants. It is intimated that some of the proprietors' methods as to the diversity of farming and other matters are not altogether satisfactory to tenants, and that is the cause of some going out of the business."

Sacramento.

It is reported in the Sacramento papers that E. K. Alsip, the real estate dealer who recently disappeared mysteriously, is a defaulter in a large sum—in the neighborhood of \$25,000—to the Fair Oaks Colony Co. The loss, we understand, will fall on the Eastern stockholders and will not affect the Fair Oaks colonists.

San Joaquin.

FARMERS ARE HOPEFUL.—While very general anxiety is felt at Stockton and elsewhere over the backwardness of the season in the matter of rainfall, it is the universal opinion among practical men that there is still time if seasonal rains come from this time on. On Saturday, 29th inst., the Stockton *Mail* interviewed a number of local farmers, with the following result: William B. Webster of French Camp was of the opinion that light rains throughout March with heavy rains in April would make splendid crops. In the heavy lands there was not so much hurry and no cause for grave alarm, but in the West Side country and Tulare county there must be rains immediately or the crops could hardly be saved. J. C. Brown of Roberts Island, who has a small tract on the upper division, says that the ground is so dry that dust flies behind the plows. The soil for six or seven inches deep can be powdered when turned up. Plows are still running, but nearly all the land has been sown. B. F. Rollerson, who is also farming on the upper division of Roberts Island, has been waiting for the rain to come, and his seed grain is still in the granary. He plowed his land some time ago, but the weather has been so unfavorable for crops that he has not proceeded any further. Mr. Rollerson has about made up his mind now, though, to sow anyway, trusting to luck and the Weather Clerk. The Woods Brothers, who have 7500 acres of land sown to grain on the middle division of Roberts Island, were asked by the reporter what the outlook of the crop was. Their reply was, "It isn't looking out at all." Every renter farming their lands has been interviewed by them, and the unvarying reply has been that though the grain is only just peeping above the ground, it is still in good condition. The roots are healthy, some of them being three inches long, but the cold weather has retarded the growth above ground. None of the seed has rotted. S. B. Smith, who has 160 acres sown to wheat about seven miles out on the Linden road, said: "My grain has not grown any yet, but the roots are exceedingly strong. The soil has moisture enough to last for a while if we do not have too much wind. W. H. Treadway, who has a ranch on the Lower Sacramento road, spoke very encouragingly of the present condition of the crops. "We need more rain," he said, "and warmer weather. There is nothing rotting and nothing is suffering for lack of rain. The grain which is up is doing well, but that which was sown four weeks ago does show the need of more moisture. J. E. Curry, who is located near Lodi, said: "I have about 450 acres sown to wheat, which is doing fairly well. There is no sign of the lack of moisture. We need warmer weather more than we do rain. We can get along some time yet with what rain we

have had." J. W. Thompson, who has 240 acres sown to wheat, barley and rye five miles south of Lathrop, was very hopeful for the crops of 1898. "Everything looks all right, so far," he replied, in answer to the *Mail* man's questions as to the outlook for grain the coming year. "The soil is wet down about 14 inches, but we need a little more rain to take the frost out of the ground. However, we need warm weather far more than we do rain. The weather is so cold now nothing can grow." F. B. Moore, who lives about eight miles east of town on the Sonora road, thought the prospects very encouraging. "Everything looks good," he said, "and we have had enough rain to last a month or so yet. Nothing has shown up yet, because of the cold weather, but things would be just as had if we had too much water. I think we will produce a better crop than last year." J. W. Campbell, a Linden farmer, thought the prospect favorable for a fruitful yield. "We have a great deal of moisture in the ground yet," he said, "but we need warm weather. The grain is coming up slowly, but none of the seed has rotted, which is a good sign."

EXPORT OF PRUNES.—It is only a few years since all the prunes in the United States were imported from Europe. The greater part of the fruit was so inferior and so badly cured that they were a standing jest against the boarding houses where they were served. They were thin, smoky and tough, and "stewed prunes" was a phrase of reproach for contempt. Now California is exporting prunes by the hundred tons to Germany, where they must be regarded as luxuries if the Germans have not made great progress in the arts of cultivating and curing that kind of fruit. The luscious and meaty California prunes are almost a luxury at home. Now that they are being exported in large quantities the demand for them in the Eastern States is likely to be increased, as Eastern people always better appreciate American products after they are approved abroad.—Stockton Independent.

Santa Barbara.

THE BEET SUGAR FACTORY.—There is activity in the beet sugar camp. The site on the Laguna has been personally selected by Mr. Burr. The surveyors are at work surveying the narrow-gauge spur which leaves the main track at a point two and one-half miles south of town. The road will be pushed to completion, so that probably in three weeks hence trains will run from here to the factory direct. Then a track will be laid from the factory to the Southern Pacific, connecting the broad gauge also with the factory.—Santa Maria Times.

Santa Clara.

CONDITIONS IN SANTA CLARA.—From all reports the Santa Clara valley is in good trim so far for the coming crop season. The orchardists have had as much rain as was absolutely necessary, and the cold weather has held back the fruit so that there will be less danger from later frosts. With good rains in February and March, for which the outlook is now favorable, there will be an excellent crop, and stocks on hand are so light that there is a corresponding prospect of good prices.—San Jose Herald.

SAN JOSE GRANGE has under discussion a plan to distribute sample packages of California dried fruits throughout the local Grange organizations in the Eastern States by way of advertisement.

Santa Cruz.

PAJARO VALLEY FRUIT NOTES.—California nurseries are cleaned out of Bellefleur and Newtown Pippin stock. They have no more for sale this season. * * * Overland apple shipments to date are 243 carloads. * * * To date seventy-one carloads of apples have been shipped to London. * * * We expect to see the San Francisco markets closed next fall to wormy and diseased fruit. A strong movement is setting that way. It would be a profitable departure for the fruit business of this State, and would go far to impress upon orchardists the necessity of producing only a first-class merchantable article.—Pajaronian.

Solano.

A PEST OF WILD DUCKS.—Farmers along Putah canal complain of the ravages of wild ducks in their grain. The birds come in countless hordes in the early evening and gorge themselves until dawn, when they again wing their flight to the river tules. A number of farmers have informed us that their grain has been eaten to the level of the ground by the ducks, but they believe that very little damage has been done, as the grain will grow again.—Dixon Tribune.

WILL PLANT BEETS.—The Suisun *Republican* reports that there will be a considerable planting of beets thereabout this season under contract with the Crockett factory. Mr. Raaf (one of the Crockett Co.) has rented 200 acres on the Tomasini place, which he will plant in beets on his own account. John Lowe of Fairfield and Mr. Chapman, who recently arrived here from Oregon, will each devote 50 acres. W. & L. Pierce will plant 100 acres on the Edwards place, A. A. Dickie 10 acres on the Morris ranch, Fred Lambrecht 20 acres east of Suisun, and E. L. Stewart 20 acres near Denverton. Several others have signified their intention of planting beets. Mr. Raaf will bring in a force of laborers who will go from one ranch to another during the thinning time and the harvest season, and has also volunteered to render all the assistance he can in promoting the enterprise.

Sonoma.

FINE FARM SOLD.—L. C. Hobart of Virginia City, Nevada, has bought the Otis Allen ranch, north of Sebastopol. Price not reported.

Sutter.

BIG COYOTE CHASE.—F. Rinehart, the owner of a large band of sheep which he has pastured at the Butte mountains, came up from Gridley yesterday, and will to-day go into the hills to get two fox hounds which have been promised to him. "The coyotes and foxes have become so numerous at the Buttes that we must do something to exterminate them, or our sheep will all be killed. I am now on my way back to get two fox hounds, and when I get back will go over the trails with them. When they get to know the country fairly well, several of my friends in Butte, Sutter and Yuba counties who have fox hounds are going to make me a visit at the sheep camp and we will have a rousing chase. I think we have between twenty and thirty hounds in the pack. We will follow on horses and expect to have a fine time."—Chico Record.

The coyotes are causing considerable loss to the sheep men who have ranges in the Buttes, and many flocks have to be herded at night to prevent the coyotes from attacking them. Herders hang out lanterns and beat on tin cans to scare the coyotes away, but even then the sheep are sometimes killed. Yuba City Farmer.

Tulare.

HAY FOR SAN FRANCISCO.—Hay is being gathered up here for shipment to San Francisco. Two cars of alfalfa were loaded to go out to-day, \$6.50 a ton being paid for baled alfalfa on board the cars. We are reasonably sure of a hay crop whatever fortune may betide other products, as it generally expands as the grain product grows short. More than the usual quantity has been fed this winter, yet there is a surplus in the county.

THE OUTLOOK.—"What if we do have a dry year?" remarks the Tulare *Register*. "We knew before we came to this country that it was a dry country and that dry farming would assuredly yield as many failures as successes. We

knew that irrigation was the only sure dependence against crop failures and that without irrigation we could not hope for good things to come. As it was in 1896, so it may be in 1898, that all which is produced will be produced by virtue of irrigation. We got through that year pretty well, did we not—that is, those who had facilities for irrigation and used them? What better times than these dry, cool days for putting irrigation canals into proper shape for the summer's run of water? The man who is all ready for water will be apt to get it in preference to the one who is not ready; and, besides, when canals and ditches are nice and clean, they will carry twice the volume of water that they will when choked with weeds and full of rough places. Every protruding hummock of earth, every snag and every clump of bushes retards the flow and diminishes the quantity of water that reaches the land. If the year is dry, hay will bring a good price, good beef will be in demand, the little there is grown of wheat and barley will bring better prices, the cost of harvesting will be less and the people will get on somehow. They always have so far, and Tulare county has had many dry years. Of course, a dry year is not and cannot be as prosperous as a wet one, but a dry one does not wholly justify one's under lip hanging down so low that it is in danger of being stepped on."

ARIZONA.

THE BOOM IN SHEEP.—The sheep industry has recently experienced a most remarkable revival. From a condition of extreme depression which brought hundreds of its patrons to bankruptcy, it has suddenly leaped to the front rank of prosperous industries. The comparatively new enterprise of feeding lambs on a large scale in Colorado and other States has also contributed to the boom in sheep growing. Cattle breeding having also received a strong impetus, the old hostility between sheepmen and cattlemen may presently be revived. Sheep have already occupied the range vacated by cattle as a result of the recent years of drought. In Wyoming and New Mexico large areas which formerly supported herds of cattle, are now given up to sheep. In northern Arizona a similar transition is in progress, and it is predicted that in a short time the cattle industry will be practically superseded in that section by sheep growing. It is characteristic of the agricultural class to fly from one extreme to the opposite. When there is a shortage of potatoes, the price rules high, every farmer plants potatoes, the market is overstocked, the price falls to almost nothing, and thousands of bushels of the tubers rot in cellars or are fed to the stock. Something similar is now happening throughout the North and East in regard to sheep. Sheep owners have been receiving highly satisfactory prices for their feeders and wool, but sheep increase so rapidly that in a few years the country will be again overstocked. A possible surplus of cattle is much more remote. There is no new range to be opened up. The consumption of beef is steadily increasing, while the free-range area is becoming yearly more and more circumscribed. Our advice to Arizona stockmen is, stick to cattle.—Arizona Ranch News.

OREGON.

STOCK BUYERS have become quite numerous in Benton county. It seems that cattle buyers are offering very good prices, but for the most part they wish to advance part of the purchase price and stipulate that the farmers hold the stock for them until June. It is but rarely that a bargain can be made on this basis. With sheep it is different. Three dollars and a half can be obtained for fairly good sheep, and the purchaser will receive them at once.—Oregon letter.

SOME three tons of Oregon flat is to be shipped to Glasgow for a practical factory test.

CATTLE BUYERS scoured the Siuslaw last fall and drove away calves and yearlings until it seemed as if there could be hardly any left, but recently a cattleman contracted for a large number of calves at \$10 per head, to be delivered in the spring. Counting the cost of keeping them, this is a couple of dollars less than a good many were sold for in the fall.—Oregon letter.

CATTLE BUYERS are still scouring the Willamette valley and good prices are being offered for stock. The danger of selling out too closely under the stimulus of the brisk demand still menaces small stock raisers of the State. A little foresight in this direction will prove profitable to the farmer two years hence. The temptation to realize on produce of the farm and range, after the moneyless experience of the past few years, is a strong one, but it should be restrained by prudence in this case.—Portland Oregonian.

WASHINGTON.

LIVESTOCK FOR KLONDIKE.—Hon. H. J. Solveley, of Yakima county, member of the State board of audit and control, spent a few hours in Tacoma Sunday, and had much to say of the Alaska mining movement from his county and the beneficial effect of it thus far. He said that up to the present between thirty-five and forty well-known residents of Yakima county have gone to the northern gold fields, and that no less than 100 more will leave before March 1st. "We feel the effect of the Alaska business in many ways over in our district," said Mr. Solveley. "Our sheep, our cattle, our hay and our potatoes are bringing good prices, and are in steady demand."

"Not long ago 1000 goats were brought to a ranch in our county to be fed until early spring. They were purchased in Idaho, and are intended for the interior of Alaska. It has been demonstrated that these little animals are superior in every way to sheep, and the lot I speak of will soon be started northward. They can make the trip much easier than sheep, their meat is better, their pelts also are superior to those of sheep for clothing in the frozen north, and, lastly, the goats can each carry a pack of limited weight. It is the first herd that has been brought to the State, and should it prove as profitable as is expected, more will be brought up and taken north. I understand the whole herd was purchased for \$2.65 a head; so you can understand the profit which will result in event of their safe delivery in the mining district. "Then there has been a syndicate formed which has purchased 300 head of cattle. The company has put up \$18,000, and early in April will start to drive the herd into the Yukon country. The cattle have already been bought and are now being fed and put in condition for the long drive."—Seattle Times.

"Gardening in California."

This is the title of a very interesting brochure on ornamental horticulture by W. S. Lyon of Los Angeles, who has given many years to the study and practice of growing trees, shrubs and flowering plants in California, and has a sincere love for such work. Mr. Lyon was for several years State Forester, which gave him exceptional opportunity to become acquainted with our trees and plants. His book contains directions and suggestions which will be very helpful to those who desire to have their home grounds tastefully planted and satisfactorily cared for, and it will be of constant value to amateurs who desire to know how to proceed in this climate. The book is published by George Rice & Sons of Los Angeles.

HORTICULTURE.

Desirable Varieties of Fruit for Southern California.

J. W. MILLS, Agricultural Experiment Station, Pomona, at the University Farmers' Institute at Los Angeles.

It is hard to name a list of fruits that can be recommended as the best when new and better varieties are liable to be introduced. The following varieties are named in their order of ripening, and are the best that we know of at this time:

Home Peaches.—These are named irrespective of appearance as a commercial fruit, but are selected for time of ripening and for quality as a peach that we like to eat. Amsden's June, of the Red May type, ripens about the last of June, is a regular bearer and of good flavor. Waterloo, of the same class, is a few days later and lasts till Yellow St. John and large Early York come in. The later is the best flavored peach up to its time. Yellow St. John is a fine looking peach, but will not stand handling. It was raised without irrigation. Cooledge's Favorite comes next and is very prolific. This peach has white flesh, pale blush, is juicy and a general favorite. Ford's Improved has streaks of red all through the flesh, is always of fine flavor, and fills up the gap between Cooledge's Favorite and Oldmixon Free, to which it is similar. Susquehanna following, is a standard variety, a yellow freestone of fine flavor, but is not very prolific at the Station. Late Crawford is the best yellow freestone at its season, and follows Susquehanna. Stump the World, a white peach, is a few days later, and always ranked first with us till this season, when it had a white, mealy growth next to the pit that gave the fruit a pungent taste. Smock's Late Free comes in between Stump and Lovell, but the season of the two latter lap and they are both better than Smock's Free. Comet is the best late yellow freestone that we have, and is similar to Salway, which is a few days earlier.

Canning Peaches.—Yellow Tuscany is the best yellow canning cling for this section that has been tried so far. The trees grow vigorously, is productive and free from curl leaf. Sellers is a good canner, of the same type, but is not so productive. McKevitt's Cling is an excellent white canning peach without a trace of red at the pit, and stands next to Yellow Tuscany. It ripens two weeks earlier than Heath's Cling. Lovell is the best canning freestone known, at least so says the Pomona cannery.

Nectarines.—Lord Napier is the best flavored of nine varieties grown at the Station. It is a dull red color. Downtown and Stanwick are a brilliant red, and ripen with it, flavor fair. Victoria, a large white variety, ripens a month later, and stands next to Lord Napier in flavor.

Apricots.—Newcastle Early is a splendid apricot that ripens a month earlier than Blenheim. It is as good as Royal in flavor and is almost as large. Royal and Blenheim are the two best commercial apricots that we have.

Plums.—There is no tree among the plums that is so ornamental and useful as *Prunus pissardi*. It blooms in the early spring with the Japanese plum, and the innumerable clusters of snow-white flowers, set in the blood-red calyxes and stems, and the dark red fruit and foliage make it extremely ornamental throughout the growing season. The fruit is similar to the Cherry plum, but the first ripens two weeks before the first Cherry plums are edible. Precocoe de Bergthold is a veritable sugar-plum. It is yellow, and about three-quarters of an inch in diameter. Ripe about the later part of June. River's Early Prolific ripens about the middle of July, is purple and an excellent eating plum. Royal Hative is one of the best preserving plums, and is one of the standard early shipping plums of the north. It is a shy bearer. Following this come the Japanese plums, Satsuma, Normand's Yellow, Burbank, Wickson and Kelsey, ripening in the order named. Perdrigon Blanc ripens about the middle of August, but is not fit to eat till it has lain for a couple of weeks, when it is very fine. Golden Beauty follows it about a month later, and must be allowed to lay some time before it has its best flavor.

Pears.—Henry IV, an early and prolific bearer, comes in in the latter part of August, and takes the place of Summer Seckel, which does poorly at the Station. Bartlett is a good all around pear, and is the best commercial pear grown so far in this State, though Duchesse d'Angouleme, which comes a month later, is a better pear for eating and just as good to can. It is a good keeper. Epine Dumas follows, and is the best flavored pear on the place. It is small, not exceeding three inches in length. Duchesse de Mouchy is the most prolific of all pears, and is exceedingly crisp and juicy, with no decided flavor. Its only redeeming feature is its lateness. If picked in October and stored in sweat boxes in the cellar, they will keep in good condition till spring.

Apples.—Early Ripe is ripe June 25th, and is a good cooking apple. It was subject to severe blight during the last season. Alexander and Keswick

Codliu come in about the first of August, and are good cooking apples, especially the latter. Stump is our best summer apple. The tree is an upright grower, fruit elongated, with a pale clear blush and snow white flesh. It grows in clusters on the main limbs and on the inside of the tree. Skinner's Seedling is a good cooking summer apple, but not particularly good to eat out of hand. Missouri Pippin colors up in September. This season the tree blighted slightly and lost its first crop, but set a second crop, which ripened a month later. They are now in the cellar and in good condition in spite of the dry fall and winter.

Lady is a small yellow flat apple that ripens about the middle of September, and is now firm and crisp. Lawver ripens a month later, and is still hard and sound. The tree did not suffer from the blight this year, but dropped most of its fruit. Arobskoe bid fair to be a valuable apple, but the tree is very subject to blight and is not a very rapid grower.

Crab Apples.—Tracendent, a clear, yellowish, pink crab of large size, ripens in July. Hyslop ripens about two weeks later, and is a brilliant red, large size, tree a prolific bearer.

Figs.—Out of fifty varieties of figs at the Station, only five have proven to be free from souring. Angelique is a light amber colored fig. The flavor is mild, skin smooth, making it agreeable to eat out of hand. We have a white fig that was sent out from Washington under four different names that we call White Adriatic. It has a rich flavor and has never soured with us. Negro Larga is an excellent black fig. Bourjassotte Gris and Gros Gris Shiver are small gray figs that dry on the tree in our moist climate and are the sweetest figs we have.

Grapes.—We have a large number of new and Eastern varieties that are not yet in bearing. Our earliest grape is Blue Portuguese, and ripens during the latter part of July. Chasselas Rose ripens a little later. Pedro Jimenez is a good grape, with large bunches and medium sized berries. Verdalis is a large, tender white grape of fine flavor and sells well on the market. Gros Colman is very large, with handsome bunches. The flavor is not as good as some other varieties, but its looks will sell it. Flaming Tokay colors up well and makes large bunches. Olivette de Candanat, a large white variety, ripens early, at which time the flavor is poor, but if allowed to hang on the vine till late in November, the flavor becomes excellent. Black vines commence to bear young. Napoleon is a large white grape, with fine handsome bunches. It ripens about the middle of November, and is the best flavored grape at that season. Cipro Nero and Trivota are purple grapes that will ripen up to New Year's if planted in a frostless district. Cipro Nero is the best flavored of the latest grapes.

Growing the Cuthbert Raspberry in Sacramento County.

By PAUL LE BOYD, at University Farmers' Institute at Elk Grove.

Select a piece of well-drained land, without perennial weeds, level to a slight slope, cultivate deeply, smooth the surface and plant by wire in north and south rows about five feet apart, putting the plants about eighteen inches apart in the rows. This may be done any time from January to April, taking a time when the soil is in good condition to work.

The Plants.—The canes should be gathered from the old patch during wet weather, by pulling them up. This method gets the new roots which belong to this cane, and does not disturb the old roots as a shovel would. It is also much quicker than digging. Cut the canes short or they will lie flat when the first soaking storm comes.

Cultivation.—Late in the spring plow shallow, turning the furrows toward the vines. Fill the dead furrows with straw, and use them for irrigating ditches. Keep these ditches moist all summer and fall. A light coat of stable manure along the rows is good, unless the land is too rich.

When the new plants are about eighteen inches high they should have the ends pinched to make them branch. This is not necessary after the first year, as there will be plenty of canes.

The rows should be kept down to about a foot wide, leaving all strong canes within these limits. Prune as high as they will safely stand, usually three or four feet if no wires are used.

The original canes having borne a small crop will have died and must be cut out. The cultivation should be shallow and only enough to keep the weeds down.

If possible, there should be a windbreak west of the patch. Corn may be planted for this purpose.

The new growth should be kept mowed off a little higher than the bearing canes until the crop is picked. The picking season lasts through the month of June, and the patch must be picked over every second or third day, according to the weather.

Yield.—An acre in full bearing should produce about 500 crates and the price in Sacramento is usually 65 cents per crate of sixteen half-pound baskets. The crates are usually returned. The baskets cost \$3.50 per M., and picking about one-third of the gross sales.

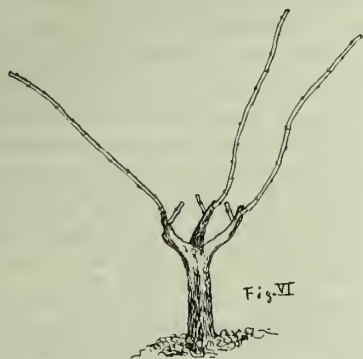
THE VINEYARD.

Vine Pruning.

NUMBER III.

By F. T. BIOLETTI, in Bulletin 119 of the Experiment Station of the University of California.

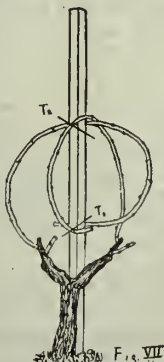
Type III.—This style is an extension of the principle used in Type II, as will be understood by referring to Fig. 6. The fruiting canes are left still longer, and in some cases almost the full length of the cane. As each cane will thus produce a large amount of fruit, fewer arms are necessary than in the preceding method. It is especially necessary to leave good, strong spurs of one or two eyes to produce wood for the following year. There are various methods of disposing of the long fruiting canes, the worst of which is to tie them straight up to the stake, as was recommended for the half-long canes. In the latter case, owing to their shortness, a certain amount of bending of the canes is possible with this method of tying. With long canes, on the contrary, it usually allows of no bending, and as a result there ensues a vigorous growth of shoots at the ends of



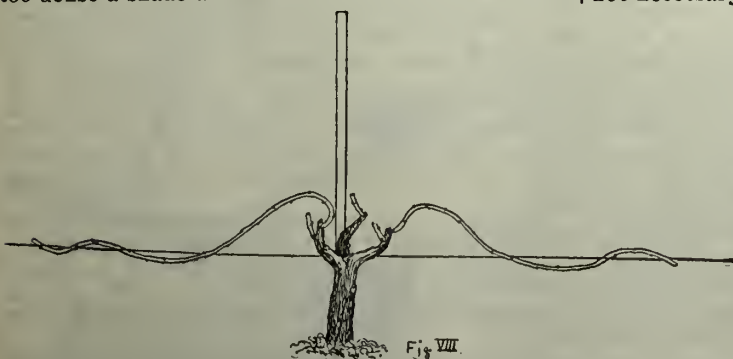
LONG PRUNING.

the fruiting canes, and little or no growth in the parts where it is necessary to look for wood for the following year. Often, indeed, each long cane will produce only three short shoots, and these from the three terminal eyes, all the other eyes of the cane remaining dormant. The object of long pruning is thus doubly defeated, first, because no more shoots are produced than by short pruning, and, second, because the shoots which should produce fruit are rendered especially vigorous by their terminal and vertical position, and therefore less fruitful. Each year all this vigorous growth of wood at the ends of the canes must be cut away in order to keep the vine within practical bounds, and the fruit canes renewed from the less vigorous cane below. These canes are less vigorous because the main strength of the vine has been expended on the upper canes, which are most favorably placed for vegetative vigor. Vines treated in this way may be gradually exhausted, though producing only a moderate or small crop of fruit, by being forced to produce an abundant crop of wood.

One of the simplest ways of tying the fruiting canes is illustrated by Fig. 7. The canes are bent into a circle, the ends tied to the stake near the head of the vine, and the middle of the circle attached higher up. The tying should be done so that the cane receives a severe bend near the base—that is, about the region of the second and third eyes. This can usually be accomplished by tying the end of the cane first, and then pressing down on the middle of the bow until the desired bend is attained. If two fruiting canes are left, they should be made to cross each other at right angles in order to distribute the fruit as equally as possible. As a rule, more than two canes should not be tied up in this way, as it makes too dense a shade and masses the fruit too much.



TYING FRUITING CANES TO STAKE.



LONG CANES SUPPORTED BY WIRE.

Fig. 8 shows another method of tying the long canes. A horizontal wire is stretched along the row

about 15 to 20 inches above the ground. To this the fruiting canes should be attached, using the same precaution of bending the canes near the bases. The upper part of the canes is not bent in this case as in the last, but the necessary diminution of vigor and increase of fruitfulness is brought about by the horizontal position. Two canes may be attached to the wire on each side. The stake is best used to support the shoots destined for the wood for the following year. This makes it possible, where topping is practiced, to cut off the ends of the shoots from the fruiting canes and to leave the rest their full length. Another or even two other wires may be used above the first for more canes, but this is seldom profitable, and considerably increases the cost both of installation and of pruning.

This style of pruning is especially favorable to varieties of small growth which bear small bunches and principally on the upper eyes, and to varieties of larger growth in hilly or poor soils. One of its main objections is that it renders some varieties more liable to sunburn.

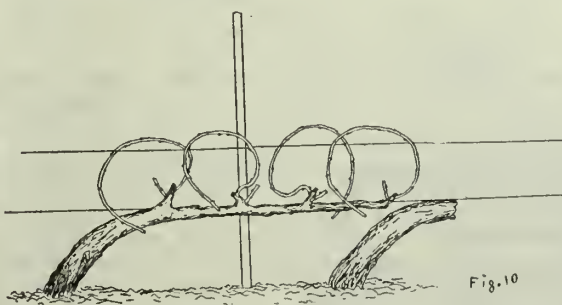
It will be noticed that the long-pruned vines are represented in the figure as having much fewer arms than the short-pruned. This is necessary and important. In order to maintain a well-balanced vine and keep it under control, there should only be about as many arms as long canes, or at most one or two more.

Types IV, V and VI.—The three styles of pruning so far described have been fairly thoroughly tested in California, and each has been found applicable to certain varieties and conditions. There are some varieties, however, which do not give good results with any of these systems. This is the case with many valuable table grapes, especially when grown in rich valley soil, where they should do best. For these cases some modification of the French cordon system is to be recommended. Little trial of this method has been made as yet, but what has been done is very promising. The tendency of many grapes to coulure is overcome, and rich soils are made to produce crops in proportion to their richness. The method consists essentially in allowing the vine to grow in a more or less horizontal direction for several feet, thus giving a larger body and fruiting surface.

The treatment of the young vines the first year is the same as for head pruning, as already described. As soon as the young vines produces a good, strong shoot it is tied up to the wire and to the stake, which is placed between the vines in the rows. Each vine should finally reach its neighbor, but it requires two or three years for this if the vines are 6 or 7 feet apart in the rows. It is possible by cutting the vine



VINES TRAINED TO GIVE LONG FRUITING SURFACE.

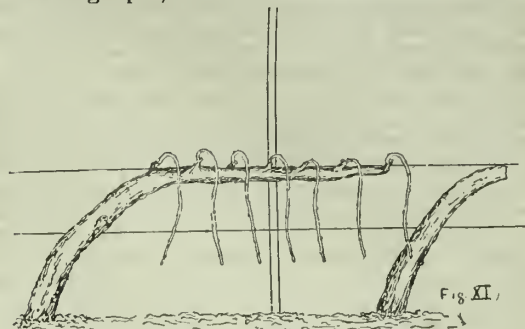


METHOD OF TYING LONG-PRUNED VINES.

back nearly to the ground for the first year or two to obtain a cane which will stretch the whole distance between the vines at the first tying up; but this is not necessary nor advisable. Neither is it advisable to make any sharp angle (almost at right angle), as is usually done in regular cordon pruning, on account of the difficulty of preventing the vine from sending out an inconvenient number of shoots at the bend. The vine might be grown with two branches, one stretching in either direction, but this has been found inconvenient on account of the difficulty of preserving an equal balance of the branches. The direction in which the vine is trained should be that of the prevailing winds, as this will minimize the chances of shoots being blown off. When the cordon or body of the vine is well formed, it may be pruned with all the modifications of short, half-long and long pruning already described in head pruning, and the same precautions are nec-

essary to preserve the balance and symmetry of the vine and to maintain it at the highest degree of fruitfulness without unduly exhausting it.

Figs. 9 and 10 will sufficiently illustrate the way of shaping and tying short and long-pruned vines. For table grapes, extension of the method shown in



FRENCH METHOD OF LONG PRUNING WITHOUT SPURS.

Fig. 9 in the direction of half-long pruning is useful. On a heavy soil the spurs do not provide sufficient outlet for the vigor of the vine, while long pruning would unduly increase the number of bunches on a single cane, and so reduce their size, which would deteriorate from their value as table grapes.

Fig. 11 represents a style of pruning used with success in some of the richest low-lying soils of France. The body of the vine is raised up to a height of 2½ or 3 feet above the soil, a useful means of lessening the danger from spring frosts. The fruit canes are bent vertically downward, thus restricting the flow of sap sufficiently to force out the lower buds of the fruit canes into strong shoots, which can be used for fruit canes of the following year. This does away, to some extent, with the necessity of leaving wood spurs, and much simplifies the pruning. Arms, of course, are formed in time, and very gradually elongate, so that it is necessary to remove one occasionally and replace it by a water sprout, as already explained under short pruning.

(To be Continued.)

THE STABLE.

Horse Breeding on the Ranges.

Some weeks ago we gave in the RURAL some interesting comments by Secretary Wilson on the kind of horse it will be profitable to grow in the near future.

A correspondent of the *Breeders' Gazette* comments upon the Secretary's views, so far as they relate to range work with horses, in a way which interest our coast breeders.

Why Range Horses are Light.—We are aware that the 700 to 1000-pound horse, such as the Secretary describes, is what is generally found on the Western ranges, but we are not willing to admit that it is wholly on account of want of winter feed and water that these horses do not grow to a greater size. As you are aware, the writer

made an effort a few months since, when he learned that Secretary Wilson was to make such a tour, to meet him and discuss this subject with him in person, and, if possible, show him by ocular demonstration that just as good and indeed better types of 1200-pound horses can be and are being grown on the range than it is possible to produce in the corn-growing States.

We do not claim that the same breeding will produce as large horses on the range as where they are wintered at the corncrib, but we do assert and are prepared to prove that as fine 1200 to 1300-pound or even 1400-pound horses can be and are grown on the range as can be found in any farmyard in the United States. They are even better, from the fact that they have never been confined to the limits of a small pasture in summer and to the farmyard in winter, where they are compelled to stand in filthy yards and heating manure several months in succession, and where they have no opportunity to develop either muscle or lung power and where the feet are grown tender and more or less contracted. The high altitude of the mountains is equally as well calculated to develop lung power in the horse as is the unlimited range to develop both muscle and hoof such as never can be produced on the farm. To produce the 1200 to 1400-pound horse on the range requires the original investment in the best breeding stock from the start, and the constant infusion of new and fresh blood the same as on the farm. This is not ordinarily done on the range, but there is no reason why it should not be done if the range horseman expects to produce such stock as will command a market.

Range Horses Superior.—On this point a little of our own experience may not be out of place. As early as 1885 we commenced breeding the best selected range mares we could find, weighing from 1000 pounds up (a class of mares which averaged far better than the class of mares to be found at that time on the farms in the Mississippi valley) to the

best imported and pure-bred draft and coach stallions that money would purchase, and from that time down to the present we have continued to breed along these lines until at present time we are prepared to show range stock by the thousands that will run from 1100 to 1400 pounds in weight and which will show better action, better bone, muscle, and hoof than can be found in any part of the United States in like numbers. These horses when put in the stable and on grain feed will continue to grow in size for two years and will in that time add from 150 to 200 pounds in weight. They have not been pampered and crowded with grain when young, and hence take on flesh and grow in size more readily when once accustomed to grain feed and will show greater powers of endurance and much less liability to disease than the farm-raised horses, which from the very nature of their early feed and care are made more delicate and subject to disease and compel the necessity of going through an acclimating process and a few weeks or months of sickness before they are in condition for service.

We have not found it practical to rise the 1800-pound draft horse on the range even when bred from stallions of that size, but we can produce and are producing 1200 to 1400-pound horses from such breeding, and horses which with two years of service in harness (such as the farm-raised horse is subjected to) will increase in size by an average of 200 pounds per horse.

The Sires Used.—We commenced breeding in 1885 to pure-bred stallions and we were told when we selected the best and highest-priced stallions that we could not afford to pay for such horses to turn loose on the range, and inferior horses were repeatedly shown us at lower prices which were said to be good enough for the purpose. To this we always answered that the best were none too good for us and never allowed such arguments or inferior stock to engage our attention. The first imported stallions taken to our range were bought of George E. Brown & Co., among which were the imported Shire stallions *Cœur de Leon* 3556, *Ironsides* 3756, and *Sir James* 4041, which were followed in later years by such horses as *Enterprise* 723, *Grey Cabus* 722, *Champion* 8489, *Lowell* 7637, and of Cleveland Bays such as *Royalty* 128 (which horse was then and is yet, as far as we know, the best Cleveland Bay horse that ever crossed the ocean), *Grand Inquisitor* 125, *Storm Signal* 228, *Reuben* 751, *Roy* 750.

The End in View.—We fully endorse the remark of Secretary Wilson that horses of the same class can be produced cheaper in the United States than anywhere else, but we go a step further and assert that the same quality of horse can be produced cheaper on the range under proper conditions than anywhere else in the United States, and this very fact has enabled us to go on producing this class of stock on the range during the past few years of depression while the farmer has been forced out of the business from the fact that he could not produce a horse for anything like the price any market would pay. We therefore still assert and are prepared to prove that the best 1100 to 1400-pound horse that can be grown in any country can be and has been produced during the past four years by us on our range in Custer Co., Mont., and we expect to show to the horsemen of the United States and foreign countries during the coming three or four years a class of horses on which our brand will be as valuable a trade mark, relatively, as the brand of "Pillsbury's Best" is on the far-famed Minnesota flour.

[This is a businesslike purpose and should be convincing that the ranges of the far West have a distinct function to discharge in the coming horse supply, and California can learn lessons from the intentions of the interior range breeders.—Ed.]

THE DAIRY.

More of the Rational View of Tuberculosis.

We gave in last week's *RURAL* very significant points upon bovine tuberculosis, showing that more rational views are gaining ground and that more conservative treatment of re-acting animals is winning support on the basis of further research and experimentation. We deem it important that all of our dairy readers may be informed of these facts, that they may be forewarned and fore-armed against issues which are too zealously pressed by municipal health authorities.

A Well-Considered View of the Disease.—J. H. Monrad, a dairy expert of high rank, who is or has been attached to the Dairy Division of the U. S. Department of Agriculture, gives the *Country Gentleman* a condensed translation of a report in *Ugeskrift for Landmand* of an address delivered by Prof. B. Bang, the Danish authority, who has studied so closely into the nature and transmission of tuberculosis.

Tuberculosis does not come from debility or cold or what not, which used to be considered its cause; it comes from the little plant which we call the tubercle bacillus. Cold, debility, etc., may promote the reception of this germ and favor its further develop-

ment, but it is just as impossible to get tuberculosis without absorbing its bacillus as to harvest wheat where none is sown.

Next we must remember that the contagion—the tubercle bacilli—are not found everywhere; they are only found where tuberculosis people or animals have been, as in their bodies only can they develop and increase. The only exception to this is in laboratories under special conditions. It is true these bacilli may live a certain time outside, and lie in wait for some new body to act as host for them, but it is chiefly in closed, dark places—stables or rooms—where they may live for a long time; in the free air, especially in sunlight, they soon perish. This fact should always be kept in mind. It is living in stables with tuberculous animals, or where they have lately been, that makes the danger of contagion great; and the darker, dirtier and more poorly ventilated the stable is, the greater the danger.

That it really is a fact that the tubercle bacilli are not everywhere—as some people think—is clearly demonstrated by the tuberculin tests. These have shown that in Denmark 22 per cent of the herds tested (1274) were perfectly free from tuberculosis. I have also proved that such freedom may be found in herds of very heavy milkers. But this has nearly always been in herds which were kept clean, and were maintained by their own increase—not by bought cows.

How to Prevent the Disease.—Tuberculosis is not a necessary evil; it may be prevented, and, if introduced, it may be eradicated. Prevention should be considered first of all; the old adage, "Prevention is better than cure," is true here. As regards human beings, it is of course equally important to consider the question of curing the individual cases, but as regards animals this must be a secondary question. Hence we must prevent the animal from becoming infected. How are the tubercle bacilli absorbed? There are, of course, several ways in which this happens, but the two most common are through inhalation and the alimentary canal. It is useless to discuss which of these is the most common. If the animal is infected by living in a stable with tuberculous animals, it is not important whether the infection is made by inhaling the bacilli-laden dust or by swallowing them with the feed or water.

Contagion From Milk.—On the other hand, we must remember that infection may be made by the introduction of the bacilli through feeding infected animal products such as milk. In these days of co-operative dairying this mode of infection has assumed a threatening proportion, and patrons having healthy cows run the risk of feeding their calves with tuberculous milk. This has been proved in many cases where the tuberculin test has shown all the grown-up animals healthy, while the calves would re-act, and where it was also proved that the skim milk, for a time, had not been heated sufficiently at the creamery. All danger is eliminated by heating the skim milk to 85° C. or 185° F.

But the Udder Must be Affected.—It must be remembered, however, that the danger of contagion from milk is very great when the udder is tuberculous, whereas it is very small as long as the tubercles are confined to other parts of the body. Yet milk from a cow with far advanced tuberculosis must be considered suspicious, even if the udder is apparently healthy.

A third manner of infection must be considered, namely, that through the foetus. While of old tuberculosis was considered easily inherited, we now know that in reality it but seldom happens. Most of the calves are born healthy, even if their mothers or fathers or both are tuberculous. On the other hand, it is wrong to assert that heredity plays no role in spreading the disease. The fact is that it may be transmitted from the womb to the foetus, but only when the womb is badly tuberculous, or when the tubercle bacilli circulate in the blood, which we know only happens in animals with a far advanced general tuberculosis. As long as the disease is local, there is no danger of infection.

Re-action not Surety of Transmission.—The largest number of cows which re-act to the tuberculin test have just such local tuberculosis, and hence there is no reason to fear that a cow, which is apparently well but has re-acted to the test, should produce a tuberculous calf. Even so as to the bull; as long as his disease is local (the generative organs excepted) there is no danger, and in all cases it is less than with the cow. That this is true is shown by the relatively rare re-action in calves and the increased cases with the age. As 40 per cent of the cows re-act, 40 per cent of the calves are born by tuberculous mothers. It is thus a proved fact that tuberculosis is chiefly an acquired, not an inherited disease. Yet it is not so very unusual to find a calf born with tuberculosis when its mother has it in an advanced stage; but it is, as a rule, latent and may take years to develop. While statistics from the large slaughtering houses show only few tuberculous young calves, the smaller houses show a larger number, as in Kiel and in Aarhus, where about 0.3 to 0.4 per cent of the young calves had tuberculosis.

Re-acting Cows May Be Safe Breeders.—While thus inherited tuberculosis must not be overlooked, and there is something in the old fixed rule, "Not to raise

the calves from tuberculous cows," it must be remembered that at that time a "tuberculous cow" meant one in a far advanced stage of the disease, as we were then not able to discover it at an early stage. It is overlooked that the tuberculin test will show the disease in animals which the butcher would declare perfectly healthy. Before the use of the tuberculin test, if the question was asked: How many tuberculous cows there were in a large (estate) herd? the reply would be about 5 per cent, and yet the test will indicate about 80 per cent. This high percentage caused a great scare and made the owners despair. But there is no cause for it at all. Many—aye, most of the apparently healthy cows on whom the test alone indicates the disease, may live for years and give healthy milk and produce healthy calves. In many of them the disease may not develop further at all, and in some cases may even be reduced so that we may speak about a cure. In some cases it will develop, and in a few, perhaps 5 per cent, do so very fast. These facts must be remembered; we must neither overestimate nor underestimate our enemy. I estimate that 0.5 per cent—at most—are infected before birth, about 12 per cent through milk and 28 by contagion in stables.

Treatment Advised.—The professor next discusses the question of the greater receptiveness which is said to be inherited and which is virtually as dangerous as if the disease were inherited. While he acknowledges the possibility of this, he claims far more difference in the receptiveness from temporary causes (colds, debility, etc.), and from individual indisposition. He asserts it to be a great mistake to believe in this inherited receptiveness because the mother re-acts to the test. As before shown, most of them have the disease only in a slight degree, and they may have got it by exposure to infection, while in reality they have a great power of resistance. The fact of a cow not re-acting is not proof of this power of resistance any more than the fact of a field, not sown with wheat, not producing any, is proof that the field is incapable of producing wheat. As long as we do not raise the calves from pronounced tuberculous cows the professor seems to think the chances about even, whether we raise them from those that re-act slightly or those that do not re-act at all.

To Get Rid of Tuberculosis.—He closes with the following common sense rules for a farmer who desires to get rid of tuberculosis:

1. Ascertain the exact condition of your herd (tuberculin test).
2. Isolate those re-acting from the healthy ones as well as possible, and thoroughly disinfect the stable of the latter.
3. See to it that healthy cows are not infected by the milk.
4. Kill immediately all the evidently tuberculous animals (noticeable without the test).
5. If the animals re-acting to the test are few, it may be more advisable to get rid of them also. If not, keep them well isolated, and as long as they do not show any clinical signs of the disease, use the milk as usual. Care must only be taken in watching for tuberculosis in the udder or advanced tuberculosis.
6. Raise the calves also from the re-acting cows as long as they do not show advanced tuberculosis, but the calves must be removed at once from the infected stable, and be given the mother's milk only the first day, and after that milk from the healthy cows, or milk that has been heated to 185° F.

The Tuberculin Test.—The professor acknowledges that the tuberculin test fails, or is not perfectly correct, in about 10 cases out of 100. The mistakes are chiefly that animals not re-acting are tuberculous after all; but in most of these cases the disease is so slight and old, with evidence of a perfect standstill in its development, that the danger from contagion from them is, if not nil, very slight indeed. Only in very few cases will the test fail on animals with the disease far advanced, but as it does happen, we must also resort to a clinical examination, and, if at all suspicious, rule them out.

Another dangerous defect in the test is the fact that repeated injections sometimes produce a lack of responsiveness to the test—they fail to re-act. While this may assist fraud, it is not constant, and the fraud will not always succeed; yet the man who labors to free his herd must only buy cows from reliable, honest men, never at fairs or from unknown people. Since 1893 there have been tested in Denmark 5733 herds, aggregating 158,991 animals, or about 10 per cent of all the animals—1,700,000. Of all the tested animals, 69 per cent were healthy and 31 per cent re-acted. Of animals under six months 11.9 per cent re-acted, under one year 22.8 per cent, under two years 33 per cent, and of full-grown 40 per cent.

The success in diminishing the disease depends on the thoroughness of the isolation, which is best done by having two farms, next best by having two separate buildings, and, next, division of stable with a close partition, and, poorest of all, a partition with door.

Condemnation to Death Too Radical.—It seems to the lay mind of the translator that the above bears the impress of honest, earnest practical work, and that it might be well for our State authorities rather

to follow the lines here indicated than to condemn all animals re-acting—a system not only extravagantly expensive to the State and liable to abuse, but terribly wrong from an economic standpoint. We have but too few really profitable cows, and if there is the least chance of raising a healthy calf from a re-acting cow giving 300 pounds of butter or more, it seems to me an outrage to condemn it to death.

Far better—so it seems—would it be to condemn to death, without payment, all animals showing visible signs of tuberculosis, and spend the money, now wasted in paying for valuable animals that ought to live and propagate, on a system of free tuberculin test and possibly on premiums for those farmers who managed the isolation in the best manner. Added to this should be the compulsory heating to 185° F. of all skim milk and whey returned to the farms.

As to the city milk supply it may not be a utopian plan to establish municipal pasteurizing plants for the compulsory pasteurization of all milk from farms not having a clean bill of health. Yet the danger seems comparatively small, and in many cities the progressive milkmen have voluntarily submitted their cows to the test.

THE POULTRY YARD.

A Plea for Thoroughbred Poultry.

By V. TRESSLAR, Riverside, at University Farmers' Club Institute, Los Angeles.

Thoroughbred poultry is on a par with other thoroughbred stock.

Thoroughbred horses have long been recognized as being superior to common stock; the same may be said of cows. In fact anything other than well-bred horses and cattle can not be found on the well-kept ranch to-day, but the same can not be said in regard to the class of poultry.

A man may have the best of horses or cattle, both of which are well housed and fed, but his poultry are the worst of mongrels—poor under-sized, ill-shaped and all colors. Certainly they are not very attractive to the eye.

Thoroughbred poultry has never received so much attention as is now being given to it. A short while ago the man who gave much attention to his poultry was supposed to be wasting time, doing work that should only be done by the women. These men were wiser than their generation and the poultry industry owes them much.

Not Necessary to be a Fancier.—It is not necessary for the rancher to start out as a fancier in order to make a success of his poultry, but the one who begins by giving his poultry good treatment, such as proper housing, good sound food and cleanliness, will, before long, be looking for pure-bred stock, because he will want to obtain the greatest possible profit and will

become convinced that thoroughbred stock is superior to any mongrel stock in poultry as well as others.

Mongrel stock is the result of accident, yet even the mongrels yield some profit. Thoroughbreds are the stock which is the result of years of careful selection of the best for the purpose desired. How much greater the profit, is only realized by those who are the possessors of thoroughbreds.

The claim that thoroughbreds are delicate and hard to raise is pure nonsense. Those who make such assertions are charging against the thoroughbreds all kinds of mismanagement—poor housing, poor food, filth, in fact, all kind of ignorant or wilful neglect. Given the proper care, the thoroughbred will prove to be not only more pleasure than the under-sized, unsightly and less productive mongrel, but also more profitable.

Statistical.—Very few realize the enormous magnitude of the poultry business in America. Mr. H. W. Collingwood, of the *Rural New Yorker*, says in an article written for the *World*: "In 1890 there were in this country 258,871,125 chickens, and 26,738,315 other fowls. In that year the American hen laid 9,836,674,922 eggs. There are now 350,000,000 hens which will lay this year 13,750,000,000 eggs. These eggs are worth \$165,000,000, and the poultry meat sold during the year will bring \$225,000,000, which gives \$290,000,000 as a very low estimate of the earnings of the American hen."

The value of all the gold produced in the American mines in 1895 was \$46,610,000, and all the silver \$72,051,000; the value of all minerals including iron, gold and silver taken out of American mines in 1894 was \$208,168,768. Americans are given to bragging about our immense mineral resources, and yet you will notice that the hens paid for it all in one year, and had enough left to just about pay the interest on all mortgages. This and much more might be said of the financial value of American poultry.

The Kansas State Board of Agriculture has issued a report showing the value of the hen as a factor in that State's husbandry: "For the year ending March 1, 1896, the value of the poultry and eggs sold was \$3,708,815, or 19 per cent more than the entire value of the rye, barley, buckwheat, castor beans, cotton, hemp, tobacco, garden and horticultural products, wine, honey, sheep and wool of the same year."

The report pays the following merited tribute to the ever helpful hen: "While everything else was going to rack and ruin, she increased and multiplied; she supported herself and family. The very insects which would have spoiled the farm she fattened upon; laying her daily egg, which took the place of beef and milk, mutton and pork, and in good time, after all these services, surrendered her toothsome body to the cause of humanity."

The above are all facts and worth knowing; but to get closer home. California imports every year carload after carload of eggs and poultry for the market. In one year \$3,000,000 was spent outside of the State for poultry and eggs. Why is this? Have we not the business foresight to keep a great portion

of this at home where it will be spent and resented? We certainly have the room, and nowhere can there be found the climatic conditions so favorable.

Essentials to Success.—To enter the poultry business here, good housing is just as essential as in the North and East; one of the greatest mistakes made in southern California is with extremely poor facilities for housing and caring for the poultry.

The general impression seems to be that all that is necessary is a lath house with a roof, with a few sticks for them to roost upon. They might just as well be in trees, and in some cases would be better if they were, for some build houses of boards and leave just enough cracks for a first-class draft, which will invariably cause roup and various other ailments commonly called "bad luck."

A house for southern California should be tight on three sides, with a good roof, and should front to the south with the roosts all on a level to avoid crowding.

Cleanliness is the first essential in keeping poultry for profit; cleanliness in all things means healthy and profitable stock. Convenience is a great aid to cleanliness. The food should be of the very best quality obtainable. Good sound grain and green alfalfa will raise 90 per cent of stock hatched from stock raised on it and kept in a good clean house; poor grain is better for fertilizer than for poultry food.

A good method of feeding, much used in southern California, is to soak rolled barley over night and mix in bran and middlings for a morning feed; whole wheat or a small amount of Egyptian corn thrown in straw for an afternoon or night feed, thus making them work for every grain, for in that way the necessary exercise is obtained. If the fowls are penned up, they should be given a liberal supply of green food, like alfalfa.

Varieties.—The varieties best suited for southern California, are the American and Mediterranean classes—the Plymouth Rocks, Wyandottes, Leghorns and Minorcas. It is commonly supposed that the Asiatic classes are too heavily feathered for our mild climate. In the poultry business one must select the variety for the purpose. Some are bred for meat, some exclusively for eggs and others for a combination of both. The American class being bred for the latter is about the most popular fowl in all sections of the country.

All breeders of thoroughbred poultry should be exhibitors at the poultry shows and fairs, for such exhibitions are the schools from which we expect and do learn of our mistakes in mating and breeding; where we learn to profit by our mistakes, and where we can see our birds and our neighbors' judged by the American standard of perfection, and where we see utility and beauty combined to give to the fancier both pleasure and profit. It is not only a pleasure, but a duty which we owe to ourselves and the future of thoroughbred poultry to exhibit stock at the shows, for to the poultry shows we owe our present high standard of excellence, and to them must look for further advancement of thoroughbred poultry. To them we owe much of the rapid advancement in southern California of the interest taken in better poultry and more of it.

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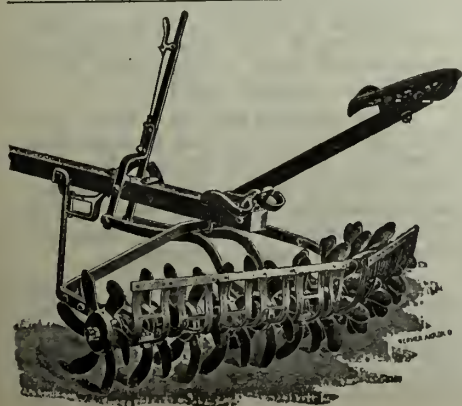
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THE HOME CIRCLE.

When Father Carves a Duck.

We all look on with anxious eyes
When father carves the duck,
And mother almost always sighs
When father carves the duck.
Then all of us prepare to rise
And hold our bids before our eyes,
And he prepared for some surprise
When father carves a duck.

He braces up and grabs a fork
Whenever he carves a duck,
And won't allow a soul to talk
Until he's carved the duck.
The fork is jabbed into the sides,
Across the breast the knife he slides,
And every careful person hides
From flying chips of duck.

The platter always seems to slip
When father carves a duck,
And how it makes the dishes skip,
Potatoes fly amuck—
The squash and cabbage leap in space,
We get some gravy on our face,
And father utters Hindu grace
Whenever he carves a duck.

We thus have learned to walk around
The dining room and pluck
From off the window sills and walls
Our share of father's duck,
While father growls and blows and jaws,
And swears the knife was full of flaws,
And mother jaws at him because
He couldn't carve a duck.

—Ernest Vincent Wright.

Abner's Wife.

"Well," said Abner Mullins, surveying the interior of the kitchen with evident disfavor, "a wife would come in kind o' convenient just now!"

It did look as if a woman's hand was needed to bring order out of chaos. Boots, clothing, dishes and fishing tackle littered the floor. A basket of cleaned fish occupied the only chair, while the table and sink were piled with an accumulation of articles too varied for description. As for dirt—dirt was everywhere!

"Folks say I'm untidy," continued Abner, as he eyed the disorder. "But I ain't. It ain't that I like dirt; it's that I don't like cleaning up. I love to see things kept nice as well as anybody. I hate dirt worse than poison, but I hate getting rid of it a heap sight more," and he drew a long sigh as he set about his uncongenial task.

"There ain't a doubt about it," he went on aloud, a habit which his solitary life had developed. "It takes more'n one to run a schooner, land or sea. It's been growing on me ever since I was hauled up in dry dock with rheumatics that I'd have to get a mate. She can boss the galley and I'll man the ropes. If there's foul weather, I can take to the dory till the storm's blown out." Here Abner attacked his breakfast dishes, a task he particularly detested.

"There will be a lot of things that ain't pleasant about it," he said, as he thought of his lost freedom. "But I'll take care what kind of one I get. I don't want a master hand at anything but cooking and scrubbing decks. I'm captain, and I won't step down in ranks for anybody."

The notion of getting married had been presenting its self to Abner for some time.

Not that he was lonely; he felt no need of a companion. His idea of a wife was one to keep his house clean, mend his clothes and cook his meals. No more tender emotion stirred in his breast.

He was getting along in years, and his rheumatism was increasing upon him. One of these days he would need some one to take care of him. His wife must be young, strong, capable and amenable; that was all he asked.

Abner Mullins had lived alone for many years. The Hermit of Beachville he was called by the young people, who regarded him with awe and suspicion. To their minds a mystery hung over his rude dwelling. Did they not hear Abner talking busily to some unseen listener?

The truth was, Abner, taciturn to all fellow-beings, was fairly garrulous with himself, and his conversations were prolonged and emphatic.

His little unpainted, shingled cabin stood on the rocks which rose high above the beach, and from the stone which served him as a step he had the

range of the broad bay and of the open sea beyond. It was a fair view, but Abner's eyes scanned the blue water more often to discover signs of schools of fish than in the enjoyment or appreciation of its beauties; and the varying moods of the sky meant to him only phases of the weather.

Abner had not proceeded far in his domestic occupation when the cheap little clock on the shelf struck ten. He dropped the dishcloth with evident relief.

"Mess or no mess, those fish have got to be carried to the boat," he said.

He took his basket on his arm, and went down the rocky lane to the village and through the one straggling street bordered by houses, white painted, but with green blinds and gay little door yards bright with flowers.

The street led to the wharf, admired by artists and by tourists with cameras, but which was regarded by the natives from a purely utilitarian standpoint.

An old schooner had been firmly grounded, propped by stout piles, its cabin converted into a wharf-house, and a flight of steps cut into its side for the landing of passengers.

The Mary Dillon had made many a hard voyage, but now she lay at rest. Leisurely feet trod her planks, and the little waves plashed gently against her weather-beaten sides—a peaceful ending of a sea-tossed existence.

As Abner sauntered along the shaky structure which bridged the space between the schooner and dry land, the little steamer slowed up to make its daily landing, and a bevy of village girls flocked to the wharf to see the boat come in, the chief excitement of the day.

The young women were in high spirits, laughing, shrieking and chewing gum vigorously. Abner's gaze was critical.

"None of them for me!" he remarked to himself. "Gadding down here at this hour in the morning, when they ought to be doing up their work! A parcel of giggling females!"

The gum also met with his disapproval.

"Waste of strength, besides being a dreadful expense! The girl with the light hair is kind o' good looking, but where'd my breakfast be while she was cleaning up? No, none of them for me!"

It never occurred to Abner that any offer he made might possibly be rejected.

"I'll have to look further'n Beachville," he thought, as he climbed back to his cabin. "If I've got to get married, I'm bound to get a wife to suit."

As the days went by, Abner's desire for a helpmeet increased, for the fishing was unusually good and kept him busy on the bay, so that his household affairs went even more sadly awry. It was clear that he must get somebody to do his housekeeping.

About two weeks after his condemnation of the Beachville maidens the hermit rowed around the Point to the sleepy old town of Bayport with a load of clams and lobsters. Bayport was a bustling metropolis to Abner, and he felt on his guard when he ventured there, for he had a vague notion that his path would be beset with sharpers. But nobody tried to take advantage of his innocence, and it was not very long before he was returning to his boat with his empty baskets.

On his journey back he stopped at a humble little house near the wharf to ask for a drink, and a young woman of perhaps twenty years answered his knock. She willingly brought to him a dipper of clear, cool water. The dipper was of tin, but it was as clean and shining as silver.

Over its rim Abner eyed the giver with interest. She was little, plump and dimpled, with a trimness about her which especially pleased Abner. He thanked her civilly.

"May I ask your name?" he ventured, wiping his mouth on his shirt sleeves.

"Susie Brown," answered the little girl, a pretty pink coming to her cheeks.

"Mine's Abner Mullins, and I'm

much obliged to you," responded Abner, with unwonted gallantry. Then he turned and went on his way.

"Trim little sloop," he said to himself; "kitchen looked ship-shape, too. I don't object to good looks if there's something to ballast them," and Abner cast off his painter and pulled for home with long, steady strokes which carried him swiftly through the dancing, sparkling waves.

Somehow Abner's little house seemed actually alone to him that night, and the next day the same feeling possessed him. He could not quite understand it.

He did not think so much of getting rid of the work as usual. The vision of a neat little figure flitting here and there and of a bright smile welcoming him on his return from fishing haunted him.

On the day following Abner persuaded himself that it was necessary to take a load of fish to Bayport, and he expended unaccustomed care on his toilet before he started. Usually he went from his fish-cleaning or from clam-digging without a thought of his appearance, but now he put on a clean flannel shirt and even trimmed his beard. After his cargo was disposed of he again rapped at the little door. Susie opened to him and quickly brought him his drink, with a smile of recognition. This was all, yet somehow Abner felt that his acquaintance had advanced a step.

After this it became an accustomed thing for Abner to go to Bayport to do his trading, and he never failed to stop at the house by the wharf to quench his thirst.

Susie was always busy about the kitchen, quick and deft, with a cheery welcome. Once she was frying doughnuts and she gave him one—a delicious circle of crispness, which he ate appreciatively and with pleased anticipation of the future.

He never crossed the threshold, but sometimes he leaned against the door-frame, watching the swift movements of Susie and indulging in a little labored conversation; or he would linger as if about to say something, then suddenly turn and hurry down the street, as if in great haste.

"He must be a steady man," said Susie to herself one day, as she watched his retreating figure, "or it would not be water he'd want so much of. But he does look like a wild man with all that beard, and he ain't got much use of his tongue."

At last came a morning when Abner spoke. Susie was unusually bewitching that day, in a fresh print gown and a distracting little sweeping cap.

"Susie," he said, swallowing hard in his effort to speak naturally. "Susie, I want you to marry me!"

Susie dropped her broom and stared. "Don't say a word!" said Abner, in great haste.

"I've got a thousand dollars laid up, and I will be a good husband to you. You won't find the work hard and I'll fit you out well. Think it over and I'll be round day after tomorrow." Abner was off before Susie, confused and blushing, could utter a word.

That evening Abner sat on his doorstep and looked out over the bay.

"I expect I'll miss being alone," he said. "But I reckon it'll be smooth sailing. I'll keep the tiller."

The next day he began to clean house. "It's only fair to give her a clean start," he said, as he scrubbed vigorously.

He was down on his hands and knees mopping up the floor when a shadow fell before him. He looked up. His doorway was filled up by the figure of a middle-aged woman, very stout, and very much out of breath.

"Well!" she panted. "It's a pull up this hill of yours, but it's a slightly place when once you get here. You Abner Mullins?"

"Yes," stammered Abner, too much astonished by the invasion to get up from the floor.

"I've come over from Bayport on purpose to see you," continued the visitor. "I'm Mrs. Brown. You've been courtin' my Susie?"

There was a note of interrogation in the last sentence which seemed to de-

mand of Abner some response. He slowly gathered himself up, and once on his feet ventured to look at Mrs. Brown. She was a comely, wholesome woman, with bright black eyes, before which Abner's wavered and fell.

"I—I asked her to marry me," he managed to utter.

"Well, now, that's all nonsense!" continued Mrs. Brown, stepping in and looking about. "Mercy sakes! What a hole! You see, Susie is only nineteen and you must be full onto forty-five. Besides, she is going back to Lewiston to work in a factory—she's only been home while I was visiting my sister—and there is a young fellow there who is paying her attention. I don't wonder you want to get married, though; livin' in this mess!"

Mrs. Brown picked up a rag from the floor, wiped a chair off, and sat down. Abner stood awkwardly before her, conscious only of a desire for her departure.

"Now look here, Abner Mullins!" went on Mrs. Brown. "I've heard a good deal about you, and I know you're an honest man and no drinker—except from Susie's dipper," she added with a chuckle. "I'll tell you what I'll do. I'll marry you myself!"

The floor-cloth dropped from Abner's hand.

"Yes," continued Mrs. Brown, "I've been a widow for fifteen years, and I begin to feel I'd like to have somebody to fend for me. I'll keep you tidy as wax—you need it bad enough, goodness knows—and I'm a master cook. I've got five hundred dollars in the bank. Susie's got her Pa's money and ain't dependent on me. My rent's up next week, so we might as well get married then. There ain't anything for us to wait for. We're old enough to know our own minds."

But Abner, standing helpless in the middle of the floor, felt that he should never know his again!

About six weeks later Abner was coming up from his dory with a basket of fish, when a Beachville acquaintance accosted him.

"Hello, Abner! How do you like being married?"

"It might be worse," said Abner, slowly, as he climbed the lane. "Yes," he continued to himself, as he looked into his neat kitchen and saw the figure of his wife stepping briskly about, preparing a savory supper and singing cheerily as she worked. "Yes, it might be a deal sight worse."

Gems of Thought.

I work with patience, which is almost power.—Elizabeth Barrett Browning.

Christ Jesus presents thee with thy crosses, and they are no mean gifts.—C. H. Spurgeon.

Service to our fellow man should be made, not a substitute for piety, but an expression of it.—Josiah Strong.

You can help your fellow men. You must help your fellow men. But the only way you can help them is by being the noblest and the best man that it is possible for you to be.—Phillips Brooks.

It may indeed be more blessed to give than to receive; but, when the former luxury is not within one's honest reach, it is blessed, too, to receive from those one thoroughly loves.—George S. Merriam.

Religion is not a method; it is a life, a higher and supernatural life, mystical in its root and practical in its fruits, a communion with God, a calm and deep enthusiasm, a love which radiates, a force which acts, a happiness which overflows.—Amiel's Journal.

'Tis an absolute and, as it were, a divine perfection for a man to know how loyally to enjoy his being. We seek other conditions, by reason we do not understand the use of our own; and go out of ourselves, because we know not how there to reside.—Montaigne.

"Doubt of any sort cannot be removed except by action." On which ground, too, let him who gropes painfully in darkness or uncertain light, and prays vehemently that the dawn may ripen into day, lay this other pre-

cept well to heart, which was to me of invaluable service: "Do the duty which lies nearest thee, which thou knowest to be a duty!" Thy second duty will already have become clearer.—Thomas Carlyle.

Fashion Notes.

Large lace ties are in vogue, both on day and evening toilettes, and these are extremely becoming to women of every age and type.

The newest frocks show that one feature very plainly. Even the ornamentation of the cuffs has departed. The very modish thing is to have only a silk cable cord about the wrist, ending probably in a little scroll at the side. The severest walking sleeves are made very far over the hand, and all sleeves are small. It is quite the mode to have the sleeve of the handsomest grown entirely plain from shoulder to wrist.

One of the latest models in silk petticoats is made with a graduated flounce much wider at the back than in front, and fitted on a yoke just over the hips. But the real novelty is the bustle, made by gathering the top of the back breadth into a sort of pouch lined with hair-cloth. This little affair is innocent enough in appearance now, but it has a significance as a forerunner which conjures up all sorts of visions of a very assertive counterpart that may come later.

Rose-colored silk or satin waists are very fashionably worn this winter with skirts of black velvet, brocade or satin, and occasionally they are seen with skirts of dark green corded silk. These waists are, as a rule, very much trimmed with handsome lace, but the garniture is often of velvet matching the skirt, with the rich addition of fur bands and beaded passementerie.

Yokes and guimpes of every shape, color and fabric are in fashion. Besides being a very dressy addition to the toilette, they are most useful in transforming a half-low, rounding or Pompadour bodice into one appropriate for any daytime dress occasion.

Many of the silk petticoats this season are lined with a fine, thin quality of outing cloth or albatross, to make them comfortable for cold weather wear.

Hussar style of jackets are noted in the newest of the cloth gowns. Short basques are also noted, and by some these are supposed to presage the downfall of the blouse. A style only recently put one side is said to be coming back—the round waist with a blouse front. Fitted waists for street suits are prophesied by an authority.

The newest models of capes and cloaks seen in Paris have the fronts curving from the throat to the back, instead of falling straight, and making a right angle with the lower edge. The curve is not accentuated to the degree where the back would be much longer than the sides. The style is pretty, and will be much in evidence for early spring.

Straps of braid terminate on many costumes with the addition of tiny buckles or fancy buttons, and tailor vests fasten with the latter trimming. The necessary button is small, but the one for ornament only is rather large. In these, as in gimps and buckles, cut steel, jet and jewelled designs outnumber all others.

Light, tissue materials in medium qualities will be in demand another season. Chiffons, gauzes, nets, Liberty silk and mousselines in endless variety of coloring will soon be seen in the stores, and for evening wear will prove both satisfactory and stylish.

Velour gros grain is a new silk highly recommended for skirts. It is very rich and soft, with a finish like velvet.

Various features of fancy dress are being introduced into 'bridemaids' costumes in England, and the polichinelle headgear is said to be very effective. Small parasols of flowers, floral muffs, or a shoe filled with blossoms are carried in place of the conventional bouquet.

Black net, the simpler laces and all

the black gauzes and tulle are worn by debutantes, but sequins or frills of plaited mousseline are considered in better taste for trimming than the jet and the steel embroidery employed in the trimming of these gowns for older persons.

Another debutante's creation was a beautiful gown of soft black net made over black taffeta, has three frills of plaited mousseline headed with a line of sparkling black sequins on the skirt. The pouched bodice has sequins on the back and sides, but none directly in front. The décolletage is bordered with soft, loose-petaled pink roses. The long sleeves are ruched, the inner seam defined by a line of sequins. A sash of net, spangled with sequins, ties on one side, the ends falling to the bottom of the skirt.

Still another was an extremely pretty frock of embroidered white tulle, made over white silk, the skirt finished by a deep ruffle of the same material. The bodice is drawn surplice fashion, in soft folds, to the left side, where it is fastened by a jewelled buckle. A soft ceinture of almond green velvet encircles the waist, and at the left side, where the surplice bodice closes, is placed a spray of small green leaves, which spreads out as it ascends, blossoming into soft yellow and white flowers, which border the décolletage. The sleeves are merely triple frills of the fancy tulle.

Earth's Heroes.

Our great men die, and old men, sadly sighing,
Shake their grey heads, and with stern faces say:
"There are few left; the race of men is dying;
From every land our heroes pass away.
We soon must follow; earth is growing weary,
This little world has had its little day."

Go to, ye prophets false! Our men of glory
Wore swaddling clothes when other men were great.
Their sires, perchance, sighed forth the same old story,
That earth had fallen from its high estate;
The race was dwindling and no future ages
Would furnish sons to rise and conquer fate.

Out on such prating! Cease your idle sorrow,
Your pessimistic utterances of doom;
One dies to-day, another's born to-morrow,
And he who dies, still speaking from the tomb,
Guides the new-born one on to future glory
And bids his heart stand fast through doubt and gloom.

Earth is still blest with heroes. Every nation
Has its great host, though hushed in waiting some;
Yet when the times are ripe and the great consummation
Of all things needful to their rise shall come,
They will stand forth and bear the brunt of battle
Till life shall end and hearts in death be dumb.

And more will come—each age will have its glories;
Babes in their mother's arms, and little ones at play,
The heritage of the great centuries' stories
Shall make them wise unto the coming day
And midst the throes of mighty nations' peril
Their sons shall rise to guard the truth alway.

—Elizabeth H. Francis in Stockton Mail.

Popular Science.

At sea level an object one hundred feet high is visible a little over thirteen miles. If five hundred feet high it is visible nearly thirty miles.

It rains on an average of 208 days in the year in Ireland, about 150 in England, at Kezan about ninety days, and in Siberia only sixty days.

According to Nilsson, the zoologist, the weight of the Greenland whale is one hundred tons, or 224,000 pounds, or equal to that of 88 elephants or 440 bears.

So rapid has been the change in the English language that the English of today bears no more resemblance to the English of a thousand years ago than it does to German.

London fog absorbs 11.1 per cent of the luminous rays from an ordinary gas flame, while 20.8 per cent of the light from an incandescent mantle is lost in it. This is, of course, due to the fact that the first mentioned light contains

far more red rays than the other, and that fog permits the passage of red rays to the exclusion of the blue evident from the deep red color which the sun assumes when seen through mist.

The most wonderful astronomical photograph in the world is that which has recently been prepared by London, Berlin and Parisian astronomers. It shows at least 68,000,000 stars.

Near Boise City, Idaho, four hundred feet below the earth's surface, there is a subterranean lake of hot water 170° temperature. It has pressure enough to ascend to the top floor of most of the houses, and will be piped to them for heating purposes.

The longest fence in the world is probably that which has just been finished by the Erie Cattle Company along the Mexican border. It is seventy-five miles in length, and separates exactly for its entire distance the two republics of North America. The fence was built to keep the cattle from running across the border, and falling easy prey to the Mexican cow punchers. Although it cost a great deal of money it is estimated that cattle enough will be saved in one year to more than pay for it. It is a barbed-wire fence, with mesquite and cottonwood poles, and for the entire length of it runs as straight as the crow flies.

"Speaking of the great wall of China," began Squildig. "Well!" replied McSwilligen, encouragingly, "China is being pushed to it."

DOMESTIC ECONOMY.

Domestic Hints.

NUNS' BEADS.—Grate a quarter of a pound of Cheshire cheese and stir it into the beaten yolks of three eggs; add enough bread crumbs to make the mixture a stiff paste, add a little salt and red pepper. Make the paste into small balls, cover each with a thin wrapper of puff paste, and fry in boiling fat to a light brown.

PEANUT MOLASSES CANDY.—Place in a good-sized kettle one quart of good molasses, one cup of sugar and one-fourth cup of butter, according to a writer in "What to Eat." Boil rapidly, stirring constantly, until it will snap sharply in ice water, then add a level teaspoonful of baking soda, and stir a moment. Have ready one quart of shelled peanuts, *i. e.*, have them shelled, skinned and broken apart into halves. Add them to the candy, and stir rapidly and just enough to mix well, and pour at once into flat, square, greased pans. When partly cold, mark into blocks and cut through. If wrapped neatly in waxed paper and kept in a dry place, this will keep nicely for weeks.

PLUM CAKE.—Take one pound of light bread dough and add to it half a pound of molasses, half a pound of butter, three eggs, six ounces of sifted flour, half an ounce of mixed ground spices and a little extract of lemon. Mix thoroughly until it is the consistency of butter, beat it well and set in a moderately warm place to rise. In about three hours beat again, and add three-quarters of a pound of seedless raisins, half a pound of currants and a quarter of a pound of chopped-up citron peel. The fruit should be previously floured. Line two pans or molds with buttered paper, half fill them with the mixture and set to rise again for about two hours. Bake in a rather slack oven for from one to two hours, according to the size of the cakes.

When baked, leave the cakes in the pans until the next day.

Hints to Housekeepers.

For chocolate stains, use cold water first, then boiling water from the tea-kettle.

Put a little salt in water if you wish to prevent black calicoes from fading when they are washed.

A mixture of vinegar and rock salt is useful to clean the inside of decanters. Dissolve a handful of salt in about a gill of vinegar; pour into the decanter and shake thoroughly until the stains have disappeared; then rinse well in clear water.

One of the best cosmetics for bicycle riders or persons upon the water is fresh cucumber juice. To extract the juice first peel the cucumber, then cut it into thick slices and press the juice out with a lemon squeezer. A simple and harmless remedy for sunburn is to bathe the face in buttermilk.

In making bags or cases for silverware, an unbleached material should be employed. Sulphur is generally used in the bleaching processes, and it tends to blacken and tarnish silver. Rubber in any form is another thing that should never be kept near silverware. Silver is best wrapped in blue, white or pink soft tissue paper and unbleached cotton-flannel bags.

It is said that when linens are badly scorched the spot can be removed if treated in the following manner: Extract the juice from two peeled onions and put it into an agate or granite vessel. Add to it half an ounce of white castile soap cut into small pieces, and two ounces of fuller's earth. Mix them together, and then stir in one cup of vinegar. Stand the vessel over fire, and let its contents thoroughly boil. When the mixture has become cool spread it over the scorched linen and let it dry upon the cloth. When well dried wash out the linen.

Remember that borax is almost as indispensable an article to have in the house as salt and pepper. Nothing softens water so well as borax. Used in the proportion of a large handful to ten gallons of water and the texture of the finest linen and cotton is not injured by it. The stains upon tablecloth and mapkins may be readily washed out by having a little borax put in the water. Indeed, a little borax water boiled in the coffee-pot twice a week sweetens and purifies it. Furthermore, it is most excellent to cleanse window glass, nothing but warm water being required with it. Wipe dry and polish with crumpled newspapers, and the glass will look as clear as crystal.

Fruit stains will usually yield to boiling water, but if not, oxalic acid may be used, allowing three ounces of the crystal to one pint of water. Wet the stain with the solution, place over a kettle of hot water in the steam or in the sunshine. The instant the stain disappears, rinse well; wet the stain with ammonia to counteract the acid remaining. Then rinse thoroughly again. This will many times save the linen, which is apt to be injured by the oxalic acid. Javelle water is excellent for almost any white goods. It can be made at home or bought at any druggists. For fresh tea and coffee stains use boiling water. Place the linen stained over a large bowl and pour through it boiling water from the tea-kettle, held at a height to insure force. Old tea and coffee stains which have become "set" should be soaked in cold water first, then boiling.

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List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING JANUARY 18, 1898.

597,456.—BICYCLE BRAKE—L. Bowles, S. F.
597,632.—PROPELLER—A. H. Carpenter, Stockton, Cal.
597,633.—PRUNE DIPPER—F. C. Chapman, Los Angeles, Cal.
597,552.—WAVE POWER—J. M. Dyer, S. F.
597,553.—WAVE POWER—J. M. Dyer, S. F.
597,466.—AIR MOTOR—Hansard & Hiatt, Lebanon, Or.
597,611.—WRENCH—Haye & Humphrey, Pendleton, Or.
497,648.—HOSE NOZZLE—E. D. Kellerman, Montebello, Wash.
597,617.—CONCENTRATOR—C. J. Paine, National Military Home, Cal.
597,565.—GUNCOTTON—C. Quinan, Pinole, Cal.
597,591.—BEDSTEAD AND MANTLE—L. W. Rhoads, San Jose, Cal.
597,482.—SINK STRAINER—A. A. Russell, Grass Valley, Cal.
597,473.—ACCOUCHMENT CHAIR—Sarah Swain, Los Angeles, Cal.
597,630.—THRESHER—W. T. Wilkins, Grimes Landing, Cal.
597,450.—GOLD SEPARATOR—J. M. Wishart, Oakland, Cal.
597,451.—TOOL HANDLE—H. A. Zeckendorf, Tucson, A. T.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

WAVE POWER.—James M. Dyer, San Francisco, Cal. No. 597,553. Dated Jan. 18, 1898. This invention relates to a means for applying the motion and power of the waves and transmitting it into a continuous rotary motion. In the present apparatus a float is made adapted to rise and fall with the movement of the waves, and this float is secured by a single anchor extending outwardly from the shore. A single rope extends from the float diagonally to a stationary mechanism on the shore so that the forward and backward and also the rising and falling movement of the float are conjointly utilized for the transmission of the power to the rotary apparatus.

PROCESS OF MAKING GUN COTTON.—Clarence Quinan, Pinole, Cal. No. 597,565. Dated Jan. 18, 1898. This invention relates to improvements in the manufacture of gun cotton from hydro-cellulose. The object of the invention is the preparation of an improved and purified hydro-cellulose with a view to a corresponding improvement in the quality of the resulting gun cotton. The process serves to remove the mineral matter, which amounts to from 1 to 2 per cent in the ordinary cellulose fiber, which is available for the manufacture of gun cotton and to nitrate all of the cellulose, where in other processes from 1 to 5 per cent remains unnitrated. In this process the mineral matter is removed so that the hydro-cellulose is nearly or quite free of ash and the waste product of factories where the high explosives is utilized in the process, which greatly cheapens it.

WAVE POWER.—James M. Dyer, San Francisco, Cal. No. 597,552. Dated Jan. 18, 1898. This invention relates to a mechanism for utilizing the power produced by the rising and falling of a vessel or float upon the waves. It consists essentially of a vessel or float having a suitable mechanism mounted upon it, means for anchoring the vessel or float to a fixed point which serves as a fulcrum about which it rises and falls, a second rope or cable so connected with the anchoring cable or fixed point that the alternate slackening and extension of the anchoring cable will transmit motion through said rope to mechanism mounted upon the vessel through which the alternate reciprocating movements are transformed into a continuous rotary movement.

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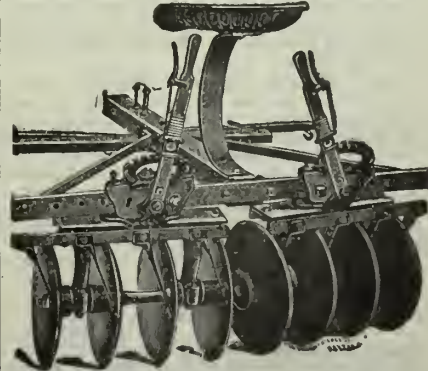
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Coast Industrial Notes.

—The Chino, Cal., Beet Sugar Refining Co. has bought H. T. Oxnard's interest in the beet sugar factory at Hueneme, including the rights of way, sites, plans, machinery ordered, etc. Mr. Oxnard takes in exchange from the company a \$750,000 mortgage on the property, payable next July.

—Work upon the San Joaquin, Cal., Electric Co.'s power-transmission line between Fresno and Hanford, via Fowler and Selma, began this week. Over 100 miles of wire will be used in the line, as three strands will be required to make the circuit. The Construction and Finance Co. of San Francisco have the contract to build the line. Electric power will be sent direct from the power house thirty-five miles east of Fresno, to Hanford, thirty-three miles south of Fresno. The power will be sent over the transmission line at a pressure of 19,600 volts, the electricity will not be utilized at such high voltage, but on its coming into the sub-stations at Hanford and Selma will pass through a step-down transformer.

—Pres. Robinson of the Mexican Central R. R. says: "Mexico is now prosperous to an unprecedented degree; in fact, the country could not well stand greater prosperity. The Mexican Central R. R. naturally shares in this prosperity. The gross earnings for the year ending Dec. 31st will show a large increase over the preceding year; the deficit after charges will be slightly reduced from our previous estimate of \$700,000. During the past year \$1,500,000 has been expended, principally for additional rolling stock, to take care of the great volume of traffic offering the road. Forty-six locomotives have been purchased and are now on the ground. The company is now receiving about 46 cents for its silver dollars. We never speculate in them, as they are sold as soon as we receive them. The prospects for 1898 are very good; they are even better than were the indications a year ago for 1897. We have not yet heard from the Mexican Government relative to a reclassification of tariffs, but we expect to hear from them very soon. Their favorable action, which is expected, will be of material benefit to Mexican railroads."

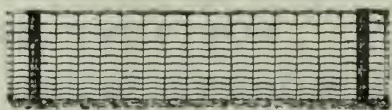
—Commercial missions must bring large results to nations who take intelligent methods to ascertain the needs of the world's markets and adjust their manufactures to the demands of distant peoples. The associated chambers of commerce of England sent out an expedition which submitted to its promoters matters of interest which may prove to be of the greatest importance to English trade. In order that the United States may enlarge foreign trade, it is of the first importance that our manufacturers should know not only what suits American tastes and prejudices, but what other people like and will have, and how to prepare and deliver such goods. The establishment of a commercial museum in Philadelphia and the projecting of another in San Francisco is the first organized effort of the United States business men to supply needful information and illustration of the world's products and demands. One of the most valuable uses of such museums is the exhibition of samples of the kinds of goods used in foreign lands and illustrations of the methods of preparing and putting up such goods as command the favor of the purchasers. This is particularly true in China. It has not unfrequently occurred that the sale of foreign goods has been greatly crippled by having some label placed upon it that was offensive to the Chinese superstition or tastes. Many colors have peculiar recognition by the people; some offend their tastes and others their superstitions. Some are all right on some kinds of goods and all wrong on others. Simply naming these things will not supply sufficient data from which to prepare them. It must be remembered that Chinese art is very peculiar, and a tiger, as ordinarily represented by foreign artists, would not meet with favor with these people. It must be a tiger according to Chinese imagination and art, of unreasonable length of body or bigness of head or curve of tail, and impossible attitudes. On a popular Japanese match box is displayed a monkey standing on its front feet, head nearly touching the ground, with hind feet up in the air, and tail whipping the skies. The grotesque and even hideous, to the American mind, tickles the fancy of the dwellers in Far Cathay. No description can supply adequate information to an engraver or colorer by which he could produce the real thing, and any departure from the Chinese fancy in such things would brand the goods at once as the product of a "foreign devil" and doom it to defeat.

—The Japanese cruiser, Chitose, was launched from the San Francisco works of the Union Iron Works recently. The Union Iron Works received information in the spring of 1895 that the Japanese government was inclined to place an order with the United States for some ships to increase her navy. On August 13, 1895, Mr. Irving M. Scott sailed for Japan to present the claims of San Francisco as a shipbuilding point, and there met Count Ito, Prime Minister of Japan,

and Count Saigo, Minister of Marine of the imperial Japanese government, and presented the facts regarding the facilities, etc., existing in San Francisco. February 23, 1896, Mr. George W. Dickie sailed for Japan, as the technical expert of the Union Iron Works, to present to Captain Sassoo, Chief of the Naval Constructors, proof of our ability to design and complete any ship the Japanese wanted. June 25, 1896, Commander N. Miyakoo, Lieutenant S. Takakura and Captain S. Sakurai were appointed a Commission by the Imperial Japanese government to examine and report upon the facilities and capacity of the Union Iron Works with regard to its ability to build the battleship. Mr. H. T. Scott completed negotiations and signed the contract at Washington, D. C., on December 31, 1896, Minister Toru Hoshi signing for the Imperial Japanese government. Captain S. Sakurai was appointed by the Imperial Japanese government as inspector of hulls and Y. Wadazaki as inspector of machinery. The first piece of keel was laid on May 3, 1897. The first rivet was driven on June 26, 1897, in the presence of the various Consuls residing in San Francisco, and other distinguished guests. The Chitose is a second-class unarmored protected cruiser to be a part of the Imperial Japanese navy. Her dimensions are: Length over all, 405 feet 2 inches; length, load water line, 396 feet; length between perpendiculars, 376 feet 5 inches; breadth, moulded, 49 feet; draught, normal, 17 feet 7 1/2 inches; displacement, 4760 tons; speed, 22 1/2 knots; I. H. P., 15,500; engines, two set, 40-60-66-66-36; revolutions, 150; No. of main boilers, 12. Armament: Two 8-inch quick-firing guns; ten 4.7-inch quick-firing guns; twelve 12-pounder quick-firing guns; six 2 1/2-pounder quick-firing guns; five 14-inch torpedo tubes.

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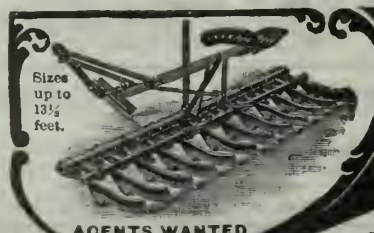
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of the Land will not keep peace in a neighborhood if the fences are bad. The remedy? Buy and build **CYCLONE FENCE** and be peaceable, happy and content. **TURNS EVERYTHING.**
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S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, February 2, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|-----------------|-----------------|
| Wednesday..... | 93 3/4 @ 94 3/4 | 84 1/4 @ 85 3/4 |
| Thursday..... | 95 @ 97 1/2 | 85 1/4 @ 87 1/2 |
| Friday..... | 96 @ 98 1/2 | 86 1/4 @ 88 |
| Saturday..... | 98 @ 96 1/2 | 86 1/4 @ 88 |
| Monday..... | 96 1/4 @ 94 3/4 | 85 3/4 @ 85 |
| Tuesday..... | 95 1/4 @ 96 1/2 | 85 1/4 @ 86 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|------------|------------|
| Wednesday..... | 7s 4 1/2 d | 7s 1 1/2 d |
| Thursday..... | 7s 4 1/2 d | 7s 1 1/2 d |
| Friday..... | 7s 5 1/2 d | 7s 2 1/2 d |
| Saturday..... | 7s 5 1/2 d | 7s 2 1/2 d |
| Monday..... | 7s 4 1/2 d | 7s 0 1/2 d |
| Tuesday..... | 7s 4 1/2 d | 7s 1 1/2 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|-----------------------|---------------------|
| Thursday..... | \$1 41 1/4 @ 1 42 3/4 | \$1 33 1/4 @ 1 35 |
| Friday..... | 1 42 @ 1 41 1/4 | 1 35 1/4 @ 1 34 1/4 |
| Saturday..... | 1 42 @ 1 42 1/4 | 1 35 1/4 @ 1 35 1/4 |
| Monday..... | 1 40 3/4 @ 1 39 1/4 | 1 32 1/4 @ 1 31 1/4 |
| Tuesday..... | 1 40 3/4 @ 1 39 1/4 | 1 32 1/4 @ 1 32 1/4 |
| Wednesday..... | 1 38 1/4 @ 1 39 1/4 | 1 32 1/4 @ 1 32 1/4 |

Wheat.

There has been an unsettled feeling in the wheat market much of the time since last review, but values for actual wheat are virtually in the same position at the close as they were a week ago, perhaps a little higher, with the general tone at this writing slightly firmer than at date of last review. There was a weak feeling a few days ago, mostly attributable to a slump in Chicago, where manipulators saw fit to crowd prices down. But Chicago speedily recovered, and subsequently showed more firmness than either the foreign or our local market. Deliveries in Europe continue light, being below the normal, and rainy weather in Argentina is interfering with harvesting in that country. In this State rain is badly needed. If the weather condition in California and Argentina could be exchanged temporarily, all concerned would be better suited. While stocks of wheat on the Atlantic side of the United States have been reduced materially for the week by shipments, the world's visible supply is reported at a slight increase, the exact figures of the increase for the week being given at 56,000 bushels.

The export movement of wheat from this port in January was not heavy, aggregating only fifteen cargoes, still it was slightly in excess of preceding month, and decidedly ahead of July and August, the first two months of the season. In July eight wheat cargoes cleared, and in August twelve, making an average of only ten per month for the first sixty days of the season. Shipments outward last month in wheat and flour, reducing the latter to the equivalent of wheat, aggregated 50,000 tons. Total stocks in the State on January 1st were estimated at not to exceed 425,000 tons. Making a conservative allowance for home consumption, the available surplus at this date is not over 200,000 tons. In this statement no calculation is made of the wheat and flour to arrive from Oregon and Washington during the next five months. But this is not likely to alter the actual conditions materially. In January less than 7000 tons in wheat and flour arrived from outside points. Making the same allowance for imports during the next five months—and it is likely to be less rather than more—there would be only 35,000 tons additional. To absorb the entire surplus may be stated as about impossible, and if it is worked down to within 35,000 tons of zero point, or nothing, all and more than can be reasonably expected will have been accomplished. So the surplus as stated above may be considered as holding good for all practical purposes, providing the wheat remaining is virtually all in sight, and it certainly should be at this time of year. As to farmers' holdings, while there is no exact data obtainable, they are estimated at about 50 per cent of the entire stocks by parties as competent as can be found to form a definite idea of the same.

| | |
|-------------------------------------|-----------------------|
| California Milling..... | \$1 43 1/4 @ 1 48 1/4 |
| Cal. No. 1 shipping, alongside..... | 1 41 1/4 @ 1 43 1/4 |
| Oregon Valley..... | 1 40 @ 1 43 1/4 |
| Walla Walla Blue Stem..... | 1 42 1/4 @ 1 47 1/4 |
| Walla Walla Club..... | 1 32 1/4 @ 1 42 1/4 |

CALL BOARD PRICES.

On San Francisco Call Board prices for No 1 white wheat per cental for the week were as follows for the options named:

| |
|--|
| May, 1898, delivery, \$1.42 1/2 @ 1.38 1/2. |
| December, 1898, delivery, \$1.35 1/2 @ 1.31 1/4. |
| Wednesday, at regular noon session of Call Board, May wheat sold at \$1.33 1/2 @ 1.39 1/2. |
| December, 1898, \$1.32 1/2 @ 1.32 1/4. |

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|----------------------|---------------------------|
| Liv. quotations..... | 6s 11 1/2 d @ 7s 0 d | 7s 10 1/2 d @ 7s 11 1/2 d |
| Freight rates..... | 15 @ 17 1/2 s | 30 @ 31 1/2 s |
| Local market..... | \$1.45 @ 1.52 1/2 | \$1.42 1/2 @ 1.45 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on February 1st and January 1st:

| Tons— | Feb. 1st. | Jan. 1st. |
|-------------|-----------|-----------|
| Wheat..... | 82,674 | 108,605 |
| Barley..... | 120,657 | 35,093 |
| Oats..... | 2,435 | 3,822 |
| Corn..... | 662 | 1,079 |

* Including 40,201 tons at Port Costa, and 38,998 tons at Stockton.

† Including 16,799 tons at Port Costa, 6774 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 26,021 tons for month of January. A year ago there were 58,132 tons wheat in Call Board warehouses.

Flour.

Business in this commodity has been lately at figures under the cost of production. The profits on bran and middlings have in some instances, however, more than compensated for the loss on the flour. Many mills have been running lately solely for the purpose of getting the benefit of the high prices on the offal.

| | |
|--------------------------------|---------------|
| Superfine, lower grades..... | \$3 00 @ 3 25 |
| Superfine, good to choice..... | 3 35 @ 3 60 |
| Country grades, extras..... | 4 00 @ 4 25 |
| Choice and extra choice..... | 4 25 @ 4 50 |
| Fancy brands, jobbing..... | 4 50 @ 4 50 |
| Oregon Bakers' extra..... | 3 90 @ 4 25 |
| Walla Walla Bakers' extra..... | 3 90 @ 4 25 |

Barley.

Market was quite strong for several days following last review, owing to continued dry weather, but with prospects favorable Monday for a liberal rainfall, the market speedily developed an easier tone. In the sample or spot market there were no radical declines in asking rates, but decided concessions to buyers would have been necessary to have effected free sales. Values on Call Board for May feed dropped 2 1/2 @ 3c Monday, owing to weather influences. Tuesday there was a partial recovery, while Wednesday, at time of going to press, there was no radical change, but speculative market was slightly easier.

| | |
|---------------------------------|-------------------|
| Feed, No. 1 to choice..... | 97 1/2 @ 1 02 1/2 |
| Feed, fair to good..... | 95 @ 97 1/2 |
| Brewing, No. 1 to choice..... | 1 05 @ 1 15 |
| Chevalier, No. 1 to choice..... | @ @ |
| Chevalier, No. 2..... | @ @ |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

| |
|---|
| May, 1898, delivery, 93 3/4 @ 91c. |
| December, 1898, delivery, — @ —c. |
| Wednesday at regular noon session of the Call Board May, 1898, feed sold at 91 1/2 @ 92 1/4c. |

Oats.

While there are no changes to record in quotable values, the market is much better supplied with this cereal than it had been for some time previous to the current week. Over 25,000 sacks have come forward from Oregon and Washington since date of last report. Most of these oats were purchased prior arrival, otherwise the market would show less steadiness.

| | |
|-------------------------------|-----------------|
| White Oats, fancy feed..... | 1 20 @ 1 25 |
| White, good to choice..... | 1 15 @ 1 20 |
| White, poor to fair..... | 1 10 @ 1 12 1/2 |
| Gray, common to choice..... | 1 15 @ 1 20 |
| Milling..... | 1 17 1/2 @ 1 20 |
| Surprise, good to choice..... | 1 20 @ 1 27 1/2 |
| Black Russian..... | 1 20 @ 1 50 |
| Red..... | 1 10 @ 1 40 |

Corn.

Values are at a higher range than last quoted, and the market is much firmer than a week ago. Large White and Small Yellow are in fairly liberal supply, some of the heaviest handlers having enough to last them for a month or more to come. Large Yellow is in very light stock, but this va-

riety can be laid down from the East at figures close to those now prevailing for the home article.

| | |
|----------------------------------|-----------------|
| Large White, good to choice..... | 1 05 @ 1 07 1/2 |
| Large Yellow..... | 1 05 @ 1 10 |
| Small Yellow..... | 1 05 @ 1 10 |
| Eastern Yellow..... | @ @ |
| Egyptian White..... | @ @ |
| Popcorn, shelled, 3/4 lb..... | @ @ |

Rye.

Prices show no quotable decline. There are no heavy quantities offering, and not likely to be during the balance of the season.

| | |
|--------------------------|-----------------|
| Good to choice, new..... | 1 05 @ 1 07 1/2 |
|--------------------------|-----------------|

Buckwheat.

Market continues against buyers. There is so little offering, however, either out of spot stocks or to arrive, that values are at present very poorly defined. Sales could just now be made to very good advantage.

| | |
|---------------------|-------------|
| Good to choice..... | 1 75 @ 1 85 |
| Silverskin..... | @ @ |

Beans.

Prices for some kinds have been again soaring skyward the past week, notably for Pinks. Asking figures for this variety have been advanced nearly \$1 per cental since last review. It is not very long since Pinks would not command \$1 per cental, while now they are close to the \$3 mark. Much of this advance is owing to the same cause of action which sent values for Bayos up to \$3. Speculators are endeavoring to corner Colored Beans, believing that they will be required for Alaska. Pinks have been taken lately on shipping orders instead of Bayos, owing to the higher price of the latter. Both are now at about the same level. Whether this will result in Bayos meeting with custom at a further advance remains to be tested. It is to be hoped that in this scramble of speculators for wealth the producing class will receive some benefit. White Beans of nearly all kinds are being a little more firmly held, owing to the high figures prevailing for Colored. Holders of Limas are less inclined to press sales than they were a few weeks ago.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 25 @ 1 50 |
| Small White, good to choice..... | 1 35 @ 1 45 |
| Lady Washington..... | 1 30 @ 1 40 |
| Butter, small..... | 1 35 @ 1 50 |
| Butter, large..... | 1 60 @ 1 75 |
| Pinks..... | 2 50 @ 2 60 |
| Bayos, good to choice..... | 2 90 @ 3 00 |
| Reds..... | 1 60 @ 1 75 |
| Red Kidneys..... | 2 00 @ 2 25 |
| Limas, good to choice..... | 1 65 @ 1 75 |
| Black-eye Beans..... | 2 25 @ 2 50 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

Late advices by mail from New York report the condition of the bean market in that center as follows, prices quoted being per bushel of 60 lbs:

There has been a sluggishness to trade again this week that is quite unusual at this season of year. Exporters have drawn very few orders from any quarter, and the light, indifferent buying by home jobbers has made the business so dull that sellers have been forced to yield a little in price, notwithstanding the very moderate receipts. Early in the week there was some effort to hold the fanciest Marrow up to \$1.40, but gradually the market broke away from that figure and finally settled to \$1.35, at which it is now easy to buy. It is possible that carload lots could be secured a little lower. Medium and Pea have come closer together in price, best marks of the former offering toward the close at \$1.15. An occasional lot of Pea is still held at that figure, but there have been sales of choice at \$1.12 1/2, and nothing higher is now quotable. Red Kidney have been held steady, but without business of any magnitude. Support has come from the firmness in the interior and light supplies here. White Kidney fairly sustained but quiet. Only a few Turtle Soup here and the feeling has been rather firm in consequence. Yellow Eye also in small supply and steady. Demand for Lima is unimportant, and while jobbing sales are generally at \$1.30, some round lots have been offered for less. Firmer advices from the West have strengthened the holding of green peas; buyers have shown fair interest.

Dried Peas.

Market is quite lightly stocked and is fully as favorable to sellers as last quoted.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 90 @ 2 00 |
| Niles Peas..... | 1 40 @ 1 50 |

Hops.

Jobbers are contending for as firm prices as last quoted, but do not show much eagerness to take hold at correspondingly good figures. There is considerable boom talk about the Hop market, but that it will develop into a reality is very doubtful. Substitutes are too plentiful and cheap for Hops to reach very high prices. During the past few years, with Hops quite reasonable, some brewers have continued to use substitutes which they adopted when hops were crowded to \$1 per pound in the early '80s.

| | |
|--------------------------------|---------|
| Good to choice, 1897 crop..... | 12 @ 16 |
|--------------------------------|---------|

The following statistical and other matter concerning hops comes from New York by recent mail:

Referring to the stock of hops remaining in growers' hands at the present time the New York Bulletin says that in New York State, it is estimated, the holdings do "not exceed 15,000 bales. Otsego county is credited with 3500 bales, including James F. Clark's crop of 1000 bales, 2500 bales in Schoharie county, 2000 bales in Oneida county, 2000 bales in Madison county, 700 bales in Franklin county, and the balance at minor points. The growers' holdings on the Pacific coast are placed at 18,000 bales in Oregon 4000 bales in Washington and 3000 bales in California." These figures are accepted by the trade as reasonably correct. Just how much stock remains in dealers' hands is difficult to ascertain, but, taking the country over, it is believed to be unusually light. Of the 18,000 bales reported in Oregon some 4000 to 5000 bales are of fairly useful hops, but the balance are diseased, late picked and such as would commonly be classed as trash. What the needs of the trade will be cannot, of course, be definitely known, but there is certain reliable data upon which some calculation can be made. The average consumption of hops in America is about 17,000 bales a month, and there are seven months before another crop will be harvested. If stocks in brewers' hands are not too large it would look as if there may be some hustling for goods before the close of this season. There is always the possibility of a curtailment of consumption, but the present statistical position is very strong. Business has continued of a most satisfactory character, particu-

larly in desirable grades. Exporters have made fresh purchases, but have devoted most attention to forwarding stock that was bought last month and which has been arriving freely. Brewers have maintained fairly good interest, and larger sales would have been effected had it not been for the reserved offerings. Prices seem to be gradually hardening, except possibly for the poor, mouldy Oregons, which are sharing least in the demand. Buyers have taken hold of '98s pretty well, and stocks of such are now in small compass.

Wool.

There is no special movement to note in Wools in this center, but there is considerable doing in the East and in Europe, and at generally stiff figures, values abroad being at relatively higher levels than those nominally current here. Operators in this center are, however, doing considerable looking around, and indications are that they are likely to begin purchasing in wholesale fashion at an early day.

SPRING.

| | |
|-----------------------------------|---------|
| Oregon Valley..... | 17 @ 18 |
| Oregon Eastern, choice..... | 13 @ 15 |
| Oregon Eastern, fair to good..... | 10 @ 12 |

FALL.

| | |
|----------------------------|-----------|
| Middle County, free..... | 10 @ 13 |
| Do do defective..... | 9 @ 11 |
| Northern, free..... | 11 @ 14 |
| Do defective..... | 10 @ 11 |
| Southern Mountain..... | 9 @ 12 |
| San Joaquin defective..... | 7 @ 8 1/2 |

Hay and Straw.

Further advances were effected in values for Hay immediately following the last review in these columns. The additional strength was more particularly confined to the better grades of Wheat Hay and mixed Wheat and Oat. Market was decidedly firm, however, for all descriptions. Stocks are light, both here and in the interior. Straw sold at a slight advance on rates ruling for some time past.

| | |
|----------------------|---------------|
| Wheat..... | 14 00 @ 18 50 |
| Wheat and Oat..... | 13 00 @ 17 50 |
| Oat..... | 13 00 @ 17 00 |
| Barley..... | 12 00 @ 15 00 |
| Clover..... | 11 00 @ 13 00 |
| Stock Hay..... | 10 00 @ 11 50 |
| Alfalfa..... | 10 00 @ 11 50 |
| Compressed..... | 14 00 @ 18 50 |
| Straw, 3/4 bale..... | 40 @ 50 |

Millstuffs.

Market for Bran and Middlings continued fully as unfavorable for the buying interest as during previous week, with no large supplies. Rolled Barley and Milled Corn tended a little more in favor of sellers than last quoted.

| | |
|---------------------|---------------|
| Bran, 3/4 ton..... | 21 00 @ 22 50 |
| Middlings..... | 22 00 @ 24 00 |
| Barley, Rolled..... | 22 00 @ 23 00 |
| Cornmeal..... | 23 00 @ 25 50 |
| Cracked Corn..... | 23 50 @ 24 00 |

Seeds.

Nothing of consequence doing at present in Seeds of any description. Mustard Seed is practically out of market. Firmer values on Flax Seed are current. Alfalfa Seed is held with a little more confidence than lately, but cannot be said to be quotably higher.

| | |
|----------------------------|-------------|
| Mustard, Yellow..... | 2 75 @ 3 00 |
| Mustard, Trieste Seed..... | 2 75 @ 3 00 |
| Mustard, Wild Brown..... | 2 00 @ 2 25 |
| Flax..... | 2 10 @ 2 20 |

| | |
|--------------------|---------------|
| Canary..... | 2 1/4 @ 2 3/4 |
| Rape..... | 2 1/4 @ 2 3/4 |
| Hemp..... | 2 3/4 @ 3 1/4 |
| Alfalfa, Utah..... | 5 1/2 @ 6 |

Bags and Bagging.

Much the same inactive condition is prevailing in this market as for several months past. Prospects now are that there will not be much contracting for forward deliveries of bags the coming spring and summer. There is every indication at this date that the supply will prove ample for all requirements.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, buyer July..... | @ @ |
| Calcutta Grain bags, 22x36, spot..... | 5 1/2 @ 5 3/4 |
| State Prison bags, per 100..... | 5 40 @ |
| Wool sacks, 4 lb..... | 30 @ |
| Wool sacks, 3 1/2 lb..... | 27 @ |
| Gunnies..... | 10 @ |
| Bean bags..... | 4 1/4 @ 4 3/4 |
| Fruit sacks, cotton..... | 5 1/2 @ 6 1/2 |

Hides, Pelts and Tallow.

Market is presenting a generally firm tone for hides. Dry hides are higher, in sympathy with market East. Pelts have been in quite good request lately, especially the cheaper ones, which are being utilized in the manufacture of clothing for Klondike prospectors. Tallow of desirable quality sells at current rates about as fast as received.

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be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|---------------------------------|-------------|-------------|
| Heavy Steers, over 56 lbs. | — @ 9 1/4 | — @ 8 1/4 |
| Medium Steers, 48 to 56 lbs. | — @ 9 1/4 | — @ 8 1/4 |
| Light Steers, under 48 lbs. | — @ 9 | — @ 8 |
| Heavy Cow Hides, over 50 lbs | 9 @ 9 1/4 | 8 @ 8 1/4 |
| Light Cow Hides, under 50 lbs | — @ 9 | — @ 8 |
| Wet Salted Kip | — @ 10 | — @ 9 |
| Wet Salted Veal | — @ 10 | — @ 9 |
| Wet Salted Calf | — @ 11 | — @ 10 |
| Dry Hides, large | 17 @ 17 1/2 | 13 @ 14 |
| Dry Kip and Veal, 11 to 16 lbs. | 14 @ 15 | — @ 11 |
| Dry Calf, under 4 lbs. | 18 @ 20 | 16 @ 17 |
| Horse Hides, large | 25 @ 25 1/2 | 25 @ 25 1/2 |
| Horse Hides, medium | 15 @ 20 | 15 @ 20 |
| Horse Hides, small | 25 @ 25 | 25 @ 25 |
| Colts' Hides | 25 @ 25 | 25 @ 25 |
| Pelts, long wool, per skin | 90 @ 130 | 90 @ 130 |
| Pelts, medium, per skin | 70 @ 90 | 70 @ 90 |
| Pelts, short wool, per skin | 40 @ 70 | 40 @ 70 |
| Pelts, shearing, per skin | 15 @ 30 | 15 @ 30 |
| Deer Skins, best summer | 25 @ 30 | 25 @ 30 |
| Deer Skins, good medium | — @ 20 | — @ 20 |
| Deer Skins, thin winter | 8 @ 10 | 8 @ 10 |
| Elk Hides | 3 @ 4 | 3 @ 4 |
| Tallow, good quality | 2 @ 3 1/4 | 2 @ 3 1/4 |
| Tallow, No. 2 | 2 @ 2 1/4 | 2 @ 2 1/4 |
| Goat Skins, perfect | 30 @ 37 1/2 | 30 @ 37 1/2 |
| Goat Skins, damaged | 10 @ 20 | 10 @ 20 |
| Kid Skins | 5 @ 10 | 5 @ 10 |

Honey.

Arrivals are light and there are no heavy supplies in this center. The inquiry is not very brisk, however, and is confined almost wholly to best qualities. Values are without quotable change, but for common and dark grades there is a lack of firmness.

| | |
|-------------------------|---------------|
| Extracted, White Liquid | 4 1/2 @ 5 |
| Extracted, Light Amber | 3 1/2 @ 4 |
| Dark Tule | 1 1/2 @ 2 1/4 |
| White Comb, 1-lb frames | 7 1/2 @ 9 1/4 |
| Amber Comb | 4 @ 6 |

Bee-wax.

The same firm tone as previously noted continues to be experienced. There is little arriving, and there is no accumulation of stocks from previous receipts.

| | |
|-----------------------|---------|
| Fair to choice, 1 lb. | 22 @ 24 |
|-----------------------|---------|

Live Stock and Meats.

Market for beef is ruling quiet, with values at same range as last quoted. There are no heavy quantities coming forward, but enough to satisfy the existing inquiry. Mutton is commanding higher rates, with tendency to more firmness on fat sheep. Yearling lambs in prime condition are in light supply. Hogs continued in very fair demand and brought about as good prices as last quoted, packers giving the preference to large, hard and fat porkers.

| | |
|---------------------------------------|---------------|
| Beef, 1st quality, dressed, net 1 lb. | 6 @ 6 1/4 |
| Beef, 2d quality | 5 1/2 @ 6 |
| Beef, 3d quality | 4 @ 5 |
| Mutton—ewes, 6 1/2 @ 7c; wethers | 7 @ 7 1/4 |
| Hogs, hard grain fed, medium | 3 1/2 @ 4 |
| Hogs, small | 3 1/2 @ 3 1/4 |
| Hogs, large hard | 3 1/2 @ 4 |
| Hogs, soft and feeders | 3 1/4 @ 3 1/2 |
| Hogs, country dressed | 4 1/4 @ 4 1/2 |
| Veal, small, 1 lb. | 6 @ 7 1/4 |
| Veal, large, 1 lb. | 6 1/2 @ 7 |
| Lamb, 1 lb. | 7 @ 8 |

Poultry.

Fryers and medium to large broilers in prime condition brought tolerably good prices, but beyond this the market was devoid of noteworthy firmness. Arrivals of California poultry were not especially heavy, but Eastern continued to come forward in liberal fashion and interfered seriously with the sale of the home product. Small and poor poultry was difficult to place, even at low prices. Some extra large and fat chickens, as is invariably the case, brought higher figures than were warranted as quotations.

| | |
|-------------------------------|-------------|
| Turkeys, dressed, 1 lb. | 11 @ 13 |
| Turkeys, live hens, 1 lb. | 10 @ 11 |
| Turkeys, live gobblers | 10 @ 11 |
| Hens, Cal., 1 doz. | 3 00 @ 4 00 |
| Roosters, old | 3 25 @ 3 50 |
| Roosters, young, (full-grown) | 4 00 @ 4 50 |
| Fryers | 4 50 @ 5 00 |
| Broilers, large | 4 50 @ 5 00 |
| Broilers, small | 3 00 @ 4 00 |
| Ducks, young, 1 doz. | 4 00 @ 5 00 |
| Ducks, old | 4 00 @ 5 00 |
| Geese, 1 pair | 1 25 @ 1 50 |
| Goslings, 1 pair | 1 25 @ 1 50 |
| Pigeons, Old, 1 doz. | 85 @ 1 00 |
| Pigeons Young | 1 25 @ 1 75 |

Butter.

Market has been firmer for all grades of fresh butter, with prices 1 @ 2c per pound higher than prevailed the previous week. Owing to packed butter being out of stock, more fresh product is required than is ordinarily consumed at this time of year. The recent cold and dry weather operated against the production. Between the decreased output and the increased requirements, values are bound to incline in favor of the producer.

| | |
|--------------------------------|-------------|
| Creamery extras, 1 lb. | 27 @ — |
| Creamery firsts | 26 @ — |
| Creamery seconds | 25 @ — |
| Dairy select | 23 1/2 @ 25 |
| Dairy seconds | 22 1/2 @ 23 |
| Dairy, soft and weedy | — @ — |
| Mixed store | 15 @ 18 |
| Creamery in tubs | 23 @ 25 |
| Pickled roll | — @ — |
| Dairy in tubs | — @ — |
| Firkin, Cal., choice to select | 22 @ 24 |
| Firkin, common to fair | 18 @ 21 |

Cheese.

While the market for cheese shows a more settled condition than for some weeks preceding, values are without quotable improvement. Stocks are not quite so heavy as they have been lately, but are still ample for current needs. There is a fair demand at the prevailing rates.

| | |
|-------------------------------|-------------|
| California fancy flat, new | 10 1/2 @ 11 |
| California, good to choice | 9 @ 10 |
| California, fair to good | 8 @ 9 |
| California Cheddar | 10 @ 11 1/4 |
| California, "Young Americans" | 10 @ 12 |

Eggs.

Contrary to general expectations, the egg market the past week recovered considerably

from its recently depressed condition. Two causes combined to bring about this result. Sharp competition among retailers cut down prices to consumers to such abnormally low figures that a very heavy demand set in. On the other hand, the weather was unfavorable for hens laying freely. As a consequence, the call for eggs at the low figures established was greater than the supply could accommodate. That the market will long remain firm is not probable.

| | |
|--|---------|
| California, select, large white and fresh | 25 @ — |
| California, select, irregular color & size | 23 @ 24 |
| California, good to choice store | 22 @ 23 |
| California, common to fair store | — @ — |
| Oregon, prime | — @ — |
| Held Eastern, as to section and grading | — @ — |
| Local Cold storage eggs | — @ — |

Vegetables.

Onion market has been tending against buyers, with present offerings mostly Oregon product and these mainly in few and strong hands. Other Vegetables, either winter or early spring, made a poor showing, not only as regards quantity and quality, but also as to variety. Where offerings were of desirable quality it was the exception if they did not meet with prompt custom at good prices.

| | |
|--------------------------------|-------------|
| Asparagus, 1 lb. | 15 @ 30 |
| Beans, String, 1 lb. | — @ — |
| Beans, Lima, 1 lb. | — @ — |
| Beans, Refuge, 1 lb. | — @ — |
| Beans, Wax, 1 lb. | — @ — |
| Cabbage, choice garden, 100 | 70 @ 80 |
| Cauliflower, 1 doz. | 60 @ 70 |
| Corn, Green, 1 sack | — @ — |
| Corn, Alameda, 1 crate | — @ — |
| Cucumbers, Alameda, 1 box | — @ — |
| Egg Plant, 1 lb. | 20 @ — |
| Garlic, 1 lb. | 3 1/2 @ 4 |
| Mushrooms, Buttons, 1 lb. | — @ — |
| Mushrooms, Wild, 1 lb. | — @ — |
| Okra, Dried, 1 lb. | 12 1/2 @ 15 |
| Onions, Yellow, good to choice | 2 00 @ 2 75 |
| Onions, Yellow, cut | 1 75 @ 2 25 |
| Peas, Sweet, Garden, 1 lb. | 6 @ 8 |
| Peppers, Green Chile, 1 lb. | 20 @ 25 |
| Rhubarb, 1 box | — @ — |
| Squash, Summer, 1 lb. | — @ — |
| Tomatoes, 1 box or crate | 75 @ 1 50 |

Potatoes.

Market for potatoes showed healthy condition, with no excessive supplies, especially of desirable grades. Receipts from Oregon are showing increase, but arrivals from all other quarters are light. Quotations are without radical change, but sales at full current figures were the rule rather than the exception, and in some instances an advance on quotable rates was realized. Sweet potatoes were not plentiful, but inquiry for them was quite limited.

| | |
|---------------------------------------|-----------|
| Early Rose, River, 1 cental | 60 @ 75 |
| Peerless, River | 40 @ 55 |
| Reds River | 70 @ 75 |
| Garnet Chit, Mission | — @ — |
| Burbanks, Salinas | 70 @ 1 10 |
| Burbanks, River, 1 sack | 50 @ 75 |
| Burbanks, Petaluma and Tomales, 1 ctl | 50 @ 70 |
| Burbanks, Oregon, 1 cental | 50 @ 90 |
| Garnet Chile, Oregon | — @ — |
| Sweet River, 1 cental | — @ — |
| Sweet Merced | 75 @ 90 |

The Fruit Market.

Fresh Fruits.

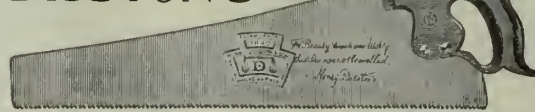
Apples are in fair supply for this season of the year, but only a small proportion of the offerings can be termed desirable in quality. Many of the Apples now on the market are from Oregon. Some arriving this week from the Yaquina Bay and Coos Bay sections were too ripe and too small to be sought after by the most particular trade. They were packed in 50-lb. boxes and ran five tiers to the box. Such stock naturally does not draw forth much competition from buyers, and 75c per box for the same is an extreme wholesale figure, not as readily realized as \$1.50 per 60-lb. box, running four tiers and composed of large apples, bright, sound and in every way desirable. Only choice to select can be placed to advantage, no matter how light the stock of fruit. There were some ordinary Apples on the market for which wholesale custom was lacking at 30c per box. In the deciduous line there is no other fruit now being presented for sale. Berries are wholly without representation at this date, although in former years it was not uncommon to have Strawberries offering in limited quantities during the winter months. With a few weeks of warm and sunny weather, early berries may put in an appearance.

| | |
|---------------------------------|-------------|
| Apples, fancy, 4-tier, 1 box | 1 25 @ 1 50 |
| Apples, choice, 4-tier, 1 box | 75 @ 1 00 |
| Apples, fair to good, 50-lb box | 50 @ 75 |
| Apples, common to fair, 1 box | 25 @ 50 |
| Quinces, 1 box | — @ — |
| Figs, Black, 2-layer box | — @ — |
| Pears, Common, 1 box | — @ — |
| Pears, Winter Nellis, 1 box | — @ — |
| Persimmons, small box | — @ — |
| Strawberries, large, chest. | — @ — |

Dried Fruits.

The conditions of the market for cured and evaporated fruits have developed no radical changes since last issue. Prices throughout remain in same position as quoted a week ago. Some jobbers report trade dull, and others claim it is fair. There is, no doubt, a little more business doing than was the case during the greater part of January. The inquiry has been largely for prunes, stocks of which have lately shown considerable reduction. Large prunes—that is, 40-50s—are now so scarce as to be hardly quotable in a regular way. The supply of 90-100s is becoming very light, and the latter are now commanding relatively better prices than the medium sizes, as they are selling on a 3c basis for the four grades, while 60-70s, 70-80s and 80-90s, from San Joaquin, Sonoma and all points outside of the Santa Clara valley, are going at 2 1/2c. Most of the Santa Claras are being held on a 3c basis. While outward movement is principally of prunes, assorted cars are being made up for Eastern points, the assortments including more or less fruit of the different kinds now in stock. Supplies are not large of any description other than prunes and raisins. Apples remain scarce and against buyers.

DISSTON'S

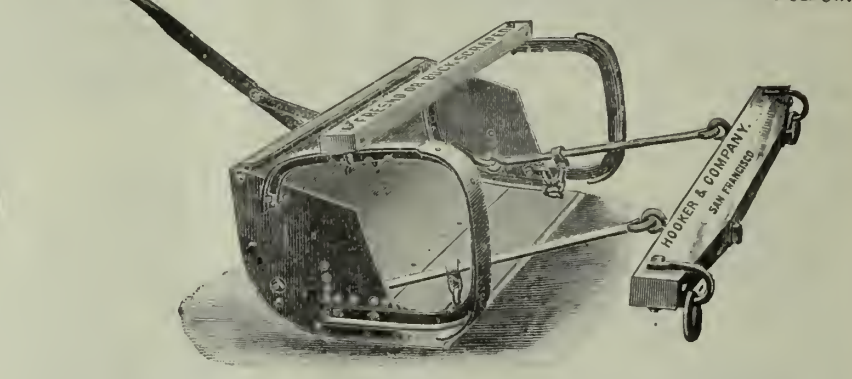


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5-Foot. Weight, 300 lbs. \$26.00.

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Values for prime to choice apricots, peaches, nectarines, pears and pitted plums are being well sustained at the prevailing range.

EVAPORATED OR BLEACHED.

| | |
|--|---------------|
| Apricots, Royal, in sacks, per lb. | 5 1/2 @ 6 |
| Apricots, Royal, fancy | 6 1/2 @ — |
| Apricots, Moorpark | 7 @ 9 |
| Apples, in boxes | 7 @ 7 1/4 |
| Figs, fancy pressed | 8 @ 10 |
| Nectarines, White | 4 1/2 @ 5 |
| Nectarines, Red | 4 1/2 @ 5 |
| Peaches, unpeeled, choice | 4 1/2 @ 5 |
| Peaches, unpeeled, fancy | 6 @ — |
| Peaches, peeled, in boxes | 9 @ 12 |
| Pears, unpeeled Bartlett, halved, fancy | 7 @ 8 |
| Pears, halved, unpeeled Bartlett | 4 1/2 @ 6 |
| Pears, quartered, unpeeled Bartlett | 4 @ 5 |
| Pears, peeled and sliced | — @ — |
| Plums, pitted | 4 1/2 @ 5 1/2 |
| Prunes, in sacks, 40-50's | 5 @ 5 1/2 |
| 50-60's | 3 1/2 @ 3 3/4 |
| 60-70's | 2 1/2 @ 3 |
| 70-80's | 2 1/2 @ 3 1/4 |
| 80-90's | 2 @ 2 1/4 |
| 90-100's | 2 @ 2 1/4 |
| Above figures are on basis of 2 1/2 @ 3c for 4 sizes. Prunes in boxes, 1/2c higher for 25-lb boxes, 1/4c higher for 50-lb boxes. | |
| 4 sizes Santa Claras and equal | 2 1/2 @ 3 |
| 4 sizes San Joaquin and Northern | 2 1/2 @ — |
| Prunes, Silver | 5 @ 8 |

COMMON SUN-DRIED.

| | |
|--------------------|-----------|
| Apricots, ordinary | 4 @ 5 1/4 |
| Apples, sliced | 3 1/2 @ 4 |
| Apples, quartered | 3 1/4 @ 4 |
| Figs, Black | 2 @ 3 1/4 |
| Figs, White | 3 @ 4 |
| Peaches, unpeeled | 3 @ 4 |
| Plums, unpitted | 1 @ 1 1/4 |

Eastern advices by mail furnish the following under recent date as to the condition of the dried fruit market in New York:

Evaporated apples have had a fair jobbing demand this week and with light offerings stock has been held firmly at full late prices. Some extra fancy fruit has reached 9 1/4 @ 9 1/2c in a small way, but 9c is generally top for average fancy, with choice about 8 1/2c and prime 8 @ 8 1/2c, latter for wood-dried, wire-dried seldom exceeding 8 @ 8 1/2c; poorer grades receive little attention. Sun-dried apples are dull, but held steady in price; offerings light. Chops have had less attention, and outside quotation is extreme at the close. Waste also more quiet and 2 1/2c difficult to exceed. Small fruits are not very plentiful and held steadily though demand moderate. California fruit quite plentiful and meeting a very good outlet, especially the cheaper grades of peaches and apricots. Prunes firmer.

| | |
|--|---------------|
| Apricots, Cal. Moorpark, 1897, per lb. | 7 @ 11 |
| Apricots, Cal. Royal, 1897, per lb. | 5 1/2 @ 8 1/4 |
| Peaches, Cal., 1897, peeled, per lb. | 10 @ 18 |
| Peaches, Cal., 1897, unpeeled, per lb. | 5 1/2 @ 10 |
| Pears, Cal., 1897, per lb. | 6 @ 10 |
| Prunes, Cal., 1897, per lb. | 3 @ 8 |

Raisins.

There is not much business doing in this fruit. Inquiry which exists is mainly from Eastern points at lower figures than bolders care to accept. In the line of quotations there is nothing to warrant making any changes. Confidence is still expressed by some in the trade that there will be considerable demand for raisins in the near future. Eastern advices report an active inquiry for seedless, owing to scarcity and dearth of foreign currants.

F. O. B. FRESNO DELIVERY.

| | |
|---------------------------------|-------------|
| Imperial Clusters, per box | — @ — |
| Dehesa Clusters, per box | — @ — |
| Fancy Clusters, per box | — @ — |
| Boxes, London layers, 20-lb box | 1 00 @ 1 10 |

(Usual advance for fractions.)

| | |
|--------------------------------|---------------|
| Loose Muscatel, 4-crown, 1 lb. | 4 @ — |
| Loose Muscatel, 3-crown | 3 1/4 @ 3 1/2 |
| Loose Muscatel, 2-crown | 2 @ — |
| Sultanas | 3 1/4 @ 4 |
| Seedless Muscatel | 2 @ 2 1/4 |
| Dried Grapes | 1 1/2 @ 2 |

Citrus Fruits.

There are fair supplies of oranges, which are offering at unchanged rates, with market easy in tone. Now that the weather is becoming warmer, a better demand for oranges may be experienced. Tri-weekly auction sales are being held, most of the fruit offered thereat being frosted and selling so low that, in some instances, the prices realized hardly cover transportation charges and other incidental expenses. Lemons are in ample stock for the current light demand, and values are barely steady. Limes are scarce and market is against buyers.

| | |
|---------------------|-------------|
| Oranges—Navel 1 box | 1 25 @ 2 50 |
| Seedlings | 75 @ 1 25 |

IT WILL PAY YOU to buy a saw with Disston's name on it. It will hold the set longer and do more work without flitting than other saws, thereby saving in labor and cost of files. They are made of the best crucible cast steel and fully warranted.

FOR SALE BY ALL DEALERS.

HENRY DISSTON & SONS, Inc.
Philadelphia, Pa.

| | |
|----------------------------|-------------|
| Lemons—Cal., select, 1 box | 2 00 @ 2 25 |
| Cal., good to choice | 1 00 @ 1 50 |
| Cal., common to good | 50 @ 1 00 |
| Limes—Mexican, 1 box | 6 00 @ 7 00 |
| Cal., small box | 1 00 @ 1 25 |
| Grape fruit, 1 crate | — @ — |

Nuts.

Almonds are practically out of the wholesale market and values are now nominal. Walnuts are mostly out of first hands, but jobbers are offering them at unchanged figures. Peanut market is quiet and steady.

| | |
|---------------------------------|-----------|
| California Almonds, paper shell | 7 @ 7 1/4 |
| California Almonds, soft shell | 5 @ 5 |
| California Almonds, hard shell | 3 @ 3 1/4 |
| Walnuts White, paper shell | 6 1/2 @ 7 |
| Walnuts White, Cal., standard | 5 @ 6 1/4 |
| Chestnuts, Cal. Italian | 5 @ 6 |
| Peanuts, Cal., fair to prime | 8 @ 9 |
| Peanuts, Eastern hand-picked | 4 @ 4 1/4 |
| Pine Nuts | 7 @ 8 |

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|----------------|--------------------|----------------------|
| Flour, 4-sks. | 82,134 | 2,932,998 |
| Wheat, cts. | 168,006 | 7,804,649 |
| Barley, cts. | 51,285 | 3,674,873 |
| Oats, cts. | 7,270 | 425,611 |
| Corn, cts. | 6,025 | 208,427 |
| Rye, cts. | 1,120 | 25,593 |
| Beans, sks. | 12,025 | 438,040 |
| Potatoes, sks. | 16,518 | 701,724 |
| Onions, sks. | 1,365 | 78,433 |
| Hay, tons. | 2,245 | 85,519 |
| Wool, bales | 20 | 48,862 |
| Hops, hales | 271 | 7,563 |

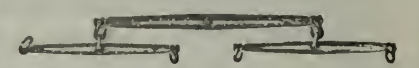
EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|-----------------|--------------------|----------------------|
| Flour, 4-sks. | 65,910 | 1,890,218 |
| Wheat, cts. | 166,729 | 7,557,468 |
| Barley, cts. | 1,447 | 2,603,715 |
| Oats, cts. | 23 | 11,166 |
| Corn, cts. | 812 | 27,989 |
| Beans, sks. | 405 | 251,806 |
| Hay, bales | 1,025 | 53,824 |
| Wool, lbs. | 13,139 | 776 |
| Hops, lbs. | 170 | 838,671 |
| Honey, cases | 13 | 6,435 |
| Potatoes, pkgs. | 1,746 | 163,898 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, February 2.—California dried fruits, steady. Evaporated Apples, common, 5 @ 7 1/2c per pound; prime wire tray, 8 1/2c; wood dried prime, 8 1/2c; choice, 8 1/2c; fancy, 9 @ 9 1/2c. Prunes, 3 @ 4c per pound. Apricots, Royal, 6 1/4 @ 8c; Moorpark, 8 @ 11c. Peaches, unpeeled, 7 @ 10c; peeled, 12 @ 20c.



The Durability of Farm Implements.

It is a common reproach against farmers that they are careless in regard to the use of their farm implements. Something may be said in extenuation of this fault. The farmer is always pushed by his work, for it must always be ahead of the purpose of it. No other man is obliged to look ahead in this respect as the farmer is. In the busy season there is scarcely time to do the most indispensable work, and necessity may be the excuse for a seeming neglect to bring in his implements and get them under cover. Now it should be the aim of every implement maker to provide as much as possible for the convenience of the farmer, and make everything of imperishable materials. One prominent example of this is afforded by the makers of the "Acme" Pulverizing Harrow, Clod Crusher and Leveler, which not only for the work it does, but for its solidity and durability, takes the first place among farm machines. It is wholly of steel, and is thus imperishable under constant exposure to the weather. A coat of red iron paint at the end of the season makes it new again. Its durability is shown by the fact that during several years of hard work in rough stony soil, the original set of steel coulters are still as good as when new. This implement is a bright example of excellence in every way, not only in material and design, but for the very best work in the field.—Henry Stewart.

The Successful Incubator.

We have before us the new catalogue of the Successful Incubator, manufactured by the Des Moines Incubator Co. of Des Moines, Iowa. So far as we are able to ascertain the results of this machine in actual operation are such as to give a hearty endorsement to the name. We see by reference to the annual catalogue that the manufacturers' guarantee is such as to leave very little to be desired. By the way, the 130-page catalogue is crowded with good things that ought to be in the hands of every man or woman who is interested in poultry in any way. It is a handsome and valuable book and worth many times more than they ask for it. Send along 6 cents in postage stamps and secure it before another day passes. It will repay you handsomely.

The Cyclone Fence.

The cyclone fence which is advertised in another column differs from most others, from the fact that all the long horizontal strands are composed of cables of two large wires securely twisted together, instead of a single wire or cable made of small wire. The advantages of this plan are that it is much stronger, and that the twisting of the wires together enables them to contract and expand at will, always resuming their former condition. Write for circular, prices, etc.

Liquid Smoke for Meats.

Smoking meats without fire has proved such a decided success that even those who were disposed a few years ago to make light of the idea are now using Krauser's Liquid Extract of Smoke. The makers, E. Krauser & Bro., of Milton, Pa., will send free to anyone interested printed matter about methods of curing and smoking all kinds of meats.

How to Hit the Bull's Eye.

Nelson J. Tuttle, who conducts large livery stables, Hartford, Conn., remarks: "For the last 25 years I have used Quinn's Ointment and found it a wonderful remedy for removing Cuts, Splints, Spavins, Windpuffs, Bunches." Trial box 50 cents, silver or stamps. Regular size \$1.50, delivered. Address W. B. Eddy & Co., Whitehall, N. Y.

Wire Fencing.—Adapts itself to any ground. Catalogue free. DeKalb Fence Co., DeKalb, Ill.

—The Mexican Government has contracted with the Western Union Telegraph Co. the following rates of charges between the two countries: From any point in the Mexican Republic outside of the free zone to any point in the United States, Canada or British Columbia, \$1.75, gold, per message of ten textual words, and 12 cents, gold, for each additional word. From any point in the United States of America, Canada or British Columbia to any point in Mexico where the Mexican Telegraph Co. have an office established, \$1.85, gold, per message of ten textual words, and 16 cents, gold, per word for each additional word. To any point in the Republic where said company has no office, \$2.15, gold, per message of ten textual words, and 19 cents, gold, for each additional word.

Fairview Stock Farm.

D. C. Palmeter, Chicago, owner above farm, Wilber, Neb., writes: "I have given Quinn's Ointment a thorough trial, has proven great success, does more than is claimed." For Cuts, Splints, Spavins, Windpuffs, Bunches, has no equal. Trial box 50 cents, silver or stamps. Regular size \$1.50, delivered. Address W. B. Eddy & Co., Whitehall, N. Y.

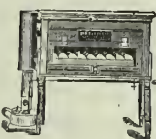
Dehorning.

It is remarkable how the removal of its horns changes the nature of an animal, making the sullen and vicious, tender and tractile in disposition. It makes animals contented, and only quiet and contented animals can lay on flesh or produce milk and butter. There are several ways of removing horns. There is probably no better way than to cut them off with the Keystone Dehorning Clipper made by A. C. Brosius, Cochranville, Penna. Write for circulars, prices, etc.

The Advance Fence.

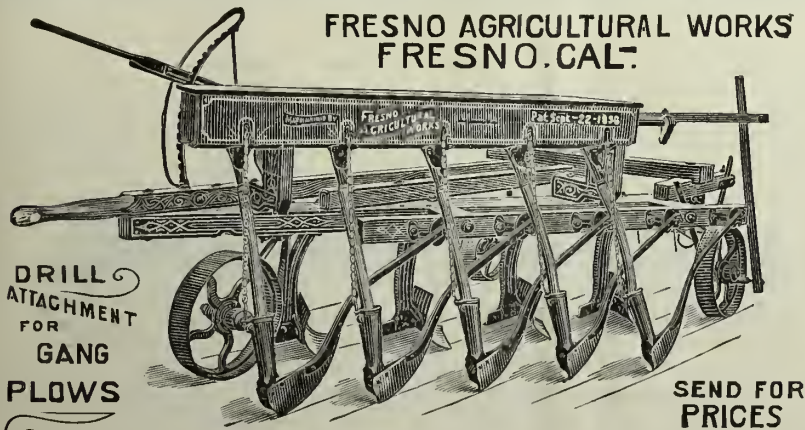
The attention of our readers is called to the advertisement of the Advance Fence Company of Peoria, Ill., which appears in another column of this issue. These people are manufacturing a very desirable, smooth, interwoven wire fence. If you are needing any wire fencing this spring you may find it to your interest to write them for circulars and prices. They sell only direct to the farmer and pay the freight, which offers many advantages.

"BROWN'S BRONCHIAL TROCHES" are a simple yet most effectual remedy for Coughs, Hoarseness and Bronchial Troubles. Avoid imitations.

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GARDEN AND FIELD.

A MANUAL OF PRACTICE WITH AND WITHOUT IRRIGATION, FOR SEMI-TROPICAL COUNTRIES.

By **EDWARD J. WICKSON, A. M.**

Professor of Agricultural Practice in the University of California; Author of "California Fruits and How to Grow Them;" President of the California State Floral Society; Horticultural Editor of the "Pacific Rural Press" of San Francisco, etc.

LARGE OCTAVO; 336 PAGES; 12 FULL-PAGE PLATES.

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| III. California Climate as Related to Vegetable Growing. | XXII. Egg Plant. |
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| XVIII. Celery. | XXXVII. Seed Growing in California. |
| XIX. Chicory. | XXXVIII. Garden Protection. |
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For many years there has been an inquiry for a work on vegetable growing in California, and in this book the demand has been adequately met.—*California Fruit Grower.*

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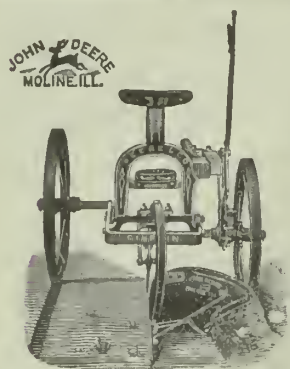
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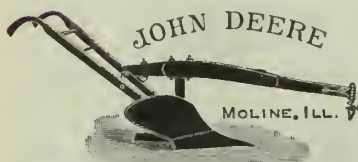
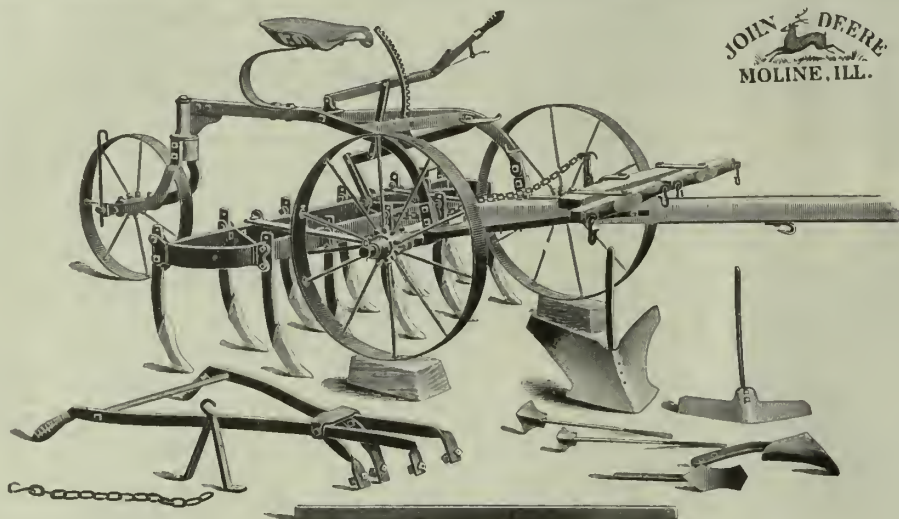
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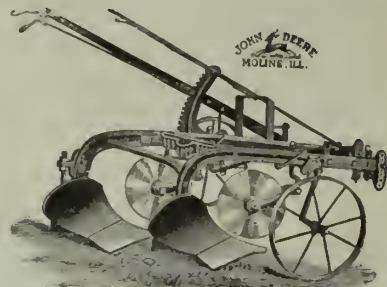
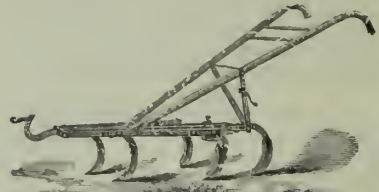


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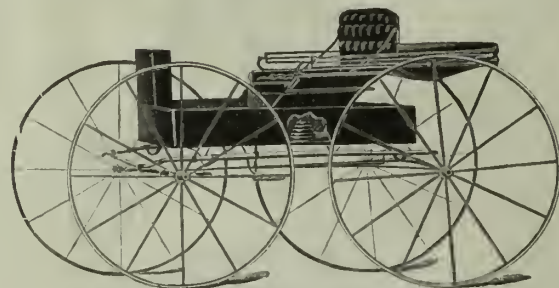
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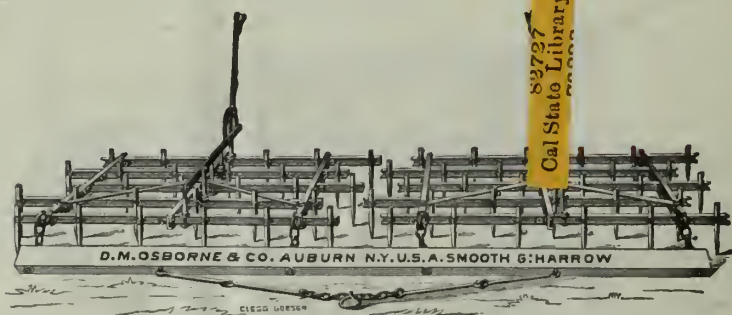
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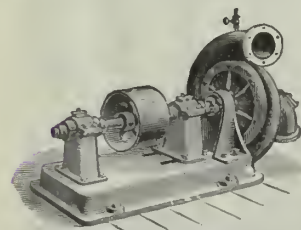
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 7.

SAN FRANCISCO, SATURDAY, FEBRUARY 12, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

Cabbage Culture.

The engraving on this page shows well what a California cabbage patch looks like when the grower does his part well. The cabbage enjoys the California soil and climate quite as keenly as do the less lowly vegetables, and responds to culture with immense weights of succulent foliage blanching and compressed until the cabbage-head becomes as heavy and as hard as a rock. The size, too, is something notable. In Wickson's "California Vegetables," from

portunity in the farther East. In the great central region of the country, however, California vegetable shippers find a large market, and growing is done on a considerable scale, but the aggregate is only a small fraction of what the State could easily produce.

San Jose Disclaims the "San Jose Scale."

Undoubtedly San Jose has suffered materially from the wide ill-fame of the so-called and miscalled "San Jose scale," which within the week has been the sub-

22nd. Larger and better exhibits than ever before are promised, and the outlook is for a fair better, even than those that have gone before.

A Possible Great Discovery.

California vine growers are naturally interested in a report which declares that M. de Dubois, a French scientist, has discovered a deadly foe to the deadly phylloxera. This foe is said to be a kind of vegetable bacteria that has its origin in a fertilizer.



AN IRRIGATED CABBAGE FIELD IN SANTA CLARA VALLEY—FROM "CALIFORNIA VEGETABLES."

which the engraving is taken, weights are given of prize cabbages grown at Arroyo Grande, which reached seventy-seven pounds in one case and eighty-one pounds in another. Such weights are not common, of course, but California cabbages are often too large for the retail trade and just right for the sauerkraut maker, for only a few are needed to fill a barrel.

California has vast capacity as a supply region for esculents of the cabbage family. The climate favors production and shipment at a time when the Eastern markets have only stored cabbage, and California cauliflower is harvested in splendid size and quality all through the winter months, so that the crop is disposed of before the Eastern grower can trust his small plants to the open air. Some years when there have been low freight rates, or a partial failure in Eastern production, there have been very large shipments in competition with the Eastern-grown cabbage in the early autumn, and money has been made in selling California cabbage, not as an early vegetable, but at prices which sauerkraut factories were willing to pay. The Eastern production has, however, been more intelligently carried on during recent years, and California producers have less op-

ject of international correspondence between the governments of Washington and Berlin. "It has," says a San Jose letter, "been inferred that San Jose was the birthplace of the dreaded scale, and that fruit trees generally in this section have been affected by it. As a matter of fact, the scale in this county has been practically stamped out of existence; and in regard to the name, it was foisted upon San Jose because the first efforts to eradicate it were made here. The scale, or shield louse, was imported to this State from Tasmania over twenty years ago, and originally came from Europe. It had a healthy existence in the world long before there were any fruit trees in this county. Long before the name 'San Jose' was attached to it it was known among entomologists as *Aspidiotus perniciosus*, and may be found in the works of Canstock. A treatise on the scale, giving its history, etc., was published in 1881 by D. C. Vestal and Dr. S. F. Chapin, two well-known orchardists of this city, under the auspices of the State Horticultural Commission."

THE Cloverdale Citrus Fair, now one of the annual interests of California, will open its doors on the 17th inst.—Thursday of next week—and hold until the

Its method of destroying the phylloxera is similar to the work of the Australian ladybug that was imported into the State a few years ago and saved our orchards from the so-called San Jose scale. The whole thing may, as Prof. Hayne of Berkeley truly says, turn out to be valueless, but we can hardly afford to ignore a means which holds out a hope of relief. The damage being done to grape vines throughout the world by phylloxera can hardly be estimated. In fact, it threatened to wipe the vineyards off the face of the earth. The French Government has long had a standing offer of \$300,000 for a preventive of the deadly scourge.

FINALITIES have been reached in the matter of the Guadalupe sugar factory. A contract signed on Tuesday of this week provides for the construction of a factory to cost \$484,760, and that work shall begin at once and be completed by September 3. For each day after that date the contractor is to forfeit \$750. The factory must have, when completed, according to the terms of contract, a capacity equal to the handling of 500 tons of beets each twenty-four hours, and must be so constructed that the capacity can be raised to 1000 tons if so desired.

PACIFIC RURAL PRESS.

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Telephone, Clay 204.

TWO DOLLARS PER YEAR IN ADVANCE.
Advertising rates made known on application.

Any subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

Registered at S. F. Postoffice as second-class mail matter.

ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, February 12, 1898.

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The Week.

Weather and Crops.

The table below summarizes in graphic form the reports, which are presented somewhat in detail in another column, concerning the rainfall of Sunday and Monday of this week. The storm was a thoroughly good one, and in the upper half of the State dispensed the water at points of greatest need. Southern California has also been refreshed, but less generously. There is still need for abundant water almost everywhere, but the recent downpour gives much stronger expectation of receiving it. Much better feeling prevails among all classes of producers.

The following data for the week ending 5 A. M. Wednesday, Feb. 9, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Last Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | 2.14 | 21.06 | 31.92 | 26.76 | 38 | 70 |
| Red Bluff..... | 2.00 | 9.22 | 18.85 | 16.26 | 36 | 64 |
| Sacramento..... | 1.22 | 6.84 | 13.32 | 12.44 | 40 | 62 |
| San Francisco..... | 1.46 | 5.85 | 16.70 | 14.84 | 45 | 62 |
| Fresno..... | .92 | 3.23 | 8.08 | 6.04 | 36 | 74 |
| San Luis Obispo..... | .92 | 3.88 | 15.25 | ..... | 38 | 76 |
| Los Angeles..... | .31 | 4.11 | 11.42 | 10.17 | 42 | 78 |
| San Diego..... | .06 | 3.38 | 7.96 | 6.08 | 42 | 68 |
| Yuma..... | ..... | 1.26 | 4.81 | 2.34 | 42 | 78 |

The Produce Market.

The rains have had the effect of cheering up pretty much everybody, including the dealers as well as producers, but they have made little or no change in prices. Hay, the feed cereals and millstuffs, which might have been expected to decline, have held their own at recent advances, and the inference is that the trade does not deem all danger of a dry season as past.

Wheat is locally rather stronger than last week in spite of efforts to depress it with reports of heavy crop prospects in other grain.

Dried fruits are just about the same as last week. Prunes of the better size are going out steadily, but in other lines there is not much activity. Peaches appear to be in larger supply than was supposed earlier in the season, and it is undeniable that holders are growing anxious.

In meats and other lines of produce there is nothing worth special mention. For full detailed report see our market pages.

American Fruits and the German Market.

On Thursday of last week cable dispatches from Europe brought the surprising and very serious news that the German Minister of Finance had issued a decree prohibiting the importation of American fruit; and that the decree should go into immediate effect. The nominal motive of this order is protection against American fruit pests, particularly the so-called San Jose scale, but this is believed to be only a shield for the true reason, which is based chiefly upon motives of political expediency as related to German internal affairs, and to some extent in the spirit of retaliation against our tariff policy.

Very naturally, the news created a sensation in all fruit centers, east and west, and especially in California, and it was not ten hours after the first dispatch was received until the government at Washington was moving actively in the matter through our Ambassador at Berlin. As the result of a good deal of negotiation, Ambassador White was able to announce on Saturday that he had secured a modification of the decree, exempting dried fruit altogether and permitting the entry of fresh fruit if, upon examination, its condition is found satisfactory. This action practically nullifies the whole matter, leaving things practically where they stood these several years past.

In California the scare in the closing days of last week was considerable. As everybody knows, we had just succeeded in getting a foothold in the German trade for our dried fruits, notably for our prunes, and the loss of this advantage would have been a very considerable one. As matters now stand we have not been hurt, but we have an intimation of the feeling on the part of the German authorities which it may be profitable to bear in mind.

That there is serious fear in Germany of the introduction of American fruit pests is not for one moment to be believed. A critical political issue between the military and agrarian interests called for some action on the part of the Government favorable to the latter; and the American fruit trade afforded a handy subject. It was a small case of "playing to the gallery," just as we sometimes see done in our own country. Again, it served the purpose of the Government very well as a piece of retaliation against the United States because of our differential tariff on sugar from bounty-paying countries, which operates to shut German sugar out of the American market. This effort at tariff retaliation in no sense discredits the German Government. It is precisely in line with our own tariff policy; and in the same spirit we shall be justified in meeting any future effort to keep out our fruit. The strength of the contest, if it comes to a contest, is in our own hands. America is a large buyer of German goods, and especially of woollens and cutlery; and if there shall come any stubborn action on fruits, all we have to do is to make such regulations as will shut out these classes of manufactures from our own market. While the real animus of the German Government toward the fruit trade has been disclosed by the incident of last week, there seems on the whole small reason for alarm on the part of American fruit growers. The Government has shown that it can act promptly, and that it understands the importance of the interests involved.

MESSRS. CHAS. A. WETMORE of Stockton and J. F. Miller of Sonoma, acting as a committee for the Winemakers' Association, are now in upper Napa county seeking to enlist the vine growers in support of the Association. A public meeting is to be held at St. Helena on the 12th and promises to be largely attended. The Corporation, Wetmore says, is active in its determination to stop further slaughter of prices and the threatened ruin of the industry, and a strong effort is being made to gain control of 80 per cent of the wine now out of the hands of either the Corporation or Association. When this shall be accomplished, he says, the producers will have command of the situation and prices will be restored to their former standard.

THE State Agricultural Society has brought suit against a large number of persons, through Devlin & Devlin, its attorneys, to quiet title to Agricultural Park, and asks that a commissioner be appointed by the court to sell the property and deposit in the State Treasury the surplus after paying all indebtedness, for the purpose of purchasing other property more suitable for its needs.

Weather and Crops.

The long dry season has been broken this past week by rains moderate in amount, but general in character. Saturday night, Sunday and Monday morning rain fell generally in the State; and except in the extreme southern portion, the rainfall was heavy. For the week the rainfall exceeds the normal by more than one inch in the upper portion of the Sacramento valley, decreasing southward. In the San Joaquin valley the rainfall is also above the normal. Along the central coast and south of the Tehachapi the rainfall is much below the normal. The temperature has been generally above the normal, and with the rain should make excellent growing weather. In the Sacramento and San Joaquin valleys the weather has been 5° to 7° warmer than the average for this time of the year. Hay and grain will be greatly helped by the rain. Stock has suffered, however, and many young lambs have died. Fruit buds have been held back, but have not suffered, being benefited rather than otherwise. The report of the U. S. Weather Service is as follows:

TEHAMA.—Over an inch of rain. Warmer and favorable for growing crops.

BUTTE.—Indications of heavy bloom on fruit trees.

GLENN.—More than one inch of rain, with prospects for more. Farmers think that with the usual spring rains there will be good crops.

COLUSA.—Rain has helped crops. Outlook previous to rain unfavorable.

EL DORADO.—Warm and plenty of rain for farmers at present.

SOLANO.—Rain has greatly improved the crop prospect. More rain needed.

SACRAMENTO.—Warmer. Fine rains doing great good to growing grain. No further apprehension as to good crops of grain.

YOLO.—Heavy rains, which were greatly needed. Fruit buds held back by cold weather.

SAN JOAQUIN.—Good rains have done great good.

MERCED.—More than one-quarter of an inch of rain Saturday, and now (Monday) raining. Prospects very encouraging.

STANISLAUS.—Early part of week dry, with north winds. Nearly all of the summer fallow is sown. Not much has been found rotted thus far. Farmers resumed work owing to rain and are cheerful over prospect of fair crop.

KERN.—Warmer and favorable weather, with rain.

FRESNO.—Warm weather, followed by generous rains, will benefit growing crops. The dry weather was hard on cattle and sheep; young lambs suffered. Farmers irrigating. Pruning. Seasonable rains will yet produce good grain crops.

TEHACHE.—Warm, with heavy rain Saturday night and Sunday. Stock growers and farmers encouraged.

SONOMA.—Over two inches of rain. Heavy crops of hay and grain assured.

NAPA.—Heavy rain Saturday and Sunday beneficial to crops, particularly to hay and grain. Increased acreage of wheat.

MONTEREY.—Rains have brightened prospects. All crops in and ground in good condition for growth.

SAN LUIS OBISPO.—Warm with more than half an inch of rain, making the outlook for grass and grain better.

LOS ANGELES.—(Duarte).—Warm and dry; orange crop looking well—free from frost. (Los Angeles).—Light rains Saturday night; raining Monday; crops looking well.

RIVERSIDE.—Warmer with winds. Movement of oranges still heavy. Back country badly in need of rain.

SAN DIEGO.—Warmer but no rain yet. Grain growing finely. Australian saucer peach trees blooming; lemons coloring on trees; pastures improving; seeding nearly finished; pruning well under way.

General Weather News.

Letters and telegrams from various sections of the State since the rain are as follows:

From Sacramento:—The rain was the heaviest of the season. Its good effects will be felt throughout the valley, which has been much in need of moisture this winter. It will start grass growing, and therefore be a great boon to cattlemen and dairymen, who, of late, have been somewhat alarmed over the continued drought. In many sections there has been almost no feed at all for cattle, and in most sections dairymen have been compelled to supplement what little pasture they had with dry feed. Wheat and grain have been retarded more by the cold than by the lack of moisture, and as the weather has become considerably warmer during the past few days, and the temperature has not fallen, there will unquestionably be a vigorous growth in the grain fields. Young buds and shoots on fruit trees, which have been held back by the cold and drought, begin to show the effects of the change in the weather, and on every side are heard predictions that this will prove a banner year for fruit men, unless something now unforeseen occurs. The facts are that the Sacramento valley, owing to a prevalence of fogs this winter, has not suffered as much from lack of moisture as have other sections of the State, but, at the same time, all kinds of crops were beginning to feel the effects of continued lack of rain.

From San Jose, 6th inst.:—While the rainfall in the valley for the last forty-eight hours has been light, the fall in the mountains and foothill lands has been comparatively heavy, as much as two inches falling in some sections. The early grain will come out all right if rain comes within a fortnight and there are no excessively hot days. Thus far there has been sufficient ground moisture for seed germination. The fruit trees are looking well and no failure of crop is anticipated if the spring rains are up to the average. In a word, both grain and fruit crops will not fail, though the latter may not quite up to the average, if the rains that are now promised come speedily and in sufficient volume. 7th:—It began to rain here early this morning, and for several hours rained heavily. The rain comes just in time to please ranchers. The fall up to 8 o'clock amounted to 0.52 of an inch, a total for the season of 4.94.

From Napa:—The present season thus far has been exceedingly cold and dry, being very favorable to the fruit growers, but not beneficial to grain growers, who have an unusually large amount of grain sown. The present rain has been of incalculable benefit to the general farming community.

From Stockton, 7th inst.:—The rainfall here for the storm up to this evening measured .78 of an inch and for the month .86. This makes for the season 4.46 inches, against 9.17 for the same time last year. The rain has done great good in this section and everybody is happy over the outlook. The indications are for more rain.

From Merced:—A heavy rainfall visited this section on Saturday evening, making glad the hearts of the farmers and dispelling all doubts of a failure of crops. On Saturday the rainfall amounted to .27 of an inch and on Monday to .49 of an inch.

From Fresno, 7th:—The farmers in this portion of the San Joaquin valley are now feeling hopeful, the opinion being

general that the long drought is at an end and that fair grain crops may yet be realized. The rainfall to-day was .42 of an inch, making .91 for the storm and 3.21 for the season.

From Monterey, 7th:—A drenching rain fell here between midnight last night and noon to-day. The precipitation was .72 of an inch. The farmers of this section consider this rain the salvation of this year's crops.

From Riverside, 7th:—Rain has been falling here all day, a quarter of an inch having fallen. The indications are good for a continuance of the storm. The rain was welcomed by the farmers, whose crops were very much in need of moisture. Reports from the grain-growing sections at Perris and San Jacinto valleys are to the effect that the storm was heavy there to-day.

From Ventura, 7th:—A quarter of an inch of rain was reported for last night. A slight spatter prevailed up to noon; an easy downpour commenced at 12:30 o'clock and continued most of the afternoon.

From San Diego, 7th:—The sky has been clouded all day and this evening, and there have been occasional sprinkles. The precipitation in this city up to 10 o'clock to-night is insignificant.

Hail Storm in Tehama.

RED BLUFF, February 7.—A hailstorm occurred here at 4 o'clock to-day, the like of which was never seen before. It lasted but fifteen minutes, but in that short time it did much damage. It came from the north after a fierce south wind, which had prevailed during the forenoon. The hailstones were as large as hens' eggs, and they fell with a rapidity and force that has never been equaled.

The greatest damage was done by the breaking of window glass. There was not a skylight left in town, and nearly all the windows on the north sides of buildings were destroyed. The leaves were stripped from the trees and probably some damage was done to the huds of fruit trees. Shingles were torn from roofs in some places.

The ground was covered with hailstones measuring from 1 to 1½ inches in diameter, making a solid layer of more than 2 inches in thickness throughout the town. The ditches and crevices were literally filled.

From Quarantine Officer Crow.

TO THE EDITOR:—In your issue of to-day appears a copy of a bill upon national horticultural quarantine introduced in the House of Representatives by the Hon. C. A. Barlow. With your permission I would like to call attention to several serious defects in the bill.

Section 1 makes it "unlawful for any transportation company, after October 1, 1898, to offer for entry at any port in the United States any trees, plants, * * * unless accompanied by a certificate of inspection by a government official of the government from which the importation was made, * * * and after the aforesaid date, October 1, 1898, all nursery stock imported in accordance with the aforesaid regulations shall be free from all inspection, quarantine, or restrictions in interstate commerce."

It would be safer for our government to entrust the enforcement of our immigration laws to the officials of other countries than that we should accept the certificate of a foreigner that the imported nursery stock had "been examined and found apparently free from all insects and fungus diseases dangerously injurious to nursery stock."

California was the first to see the importance and necessity of inspection, as nearly all our serious pests are introduced species. I have for years advocated that this work should be national, for the work done by California has benefited other sections of the Union, and we cannot be fully protected with the doors open on the north, east and south.

But the passage of Mr. Barlow's bill would defeat the very object which the author intends. California, with her vast horticultural interests, would be powerless to protect herself, for nursery stock could not be inspected upon arrival within our borders if the national law had been complied with.

We cannot expect that inspection will be as conscientiously performed by people who have no interest in our welfare as it would if done by our own people.

With a law requiring inspection upon arrival they will be more careful as to the condition of the stock they send us. If they object to inspection or fumigation at this end, they have a perfect right to keep their nursery stock at home. In most cases the United States would be better off without it.

Section 3 will hardly meet with the approval of California fruit growers. Under it we have no right to examine or exclude trees from districts that we know have insects and tree diseases that as yet do not exist with us, and simply because the trees are accompanied with a *blanket* certificate—furnished to the shipper in bulk, or book form—stating that the stock is *apparently* free from insects or disease.

The distribution of an insect or disease in a State or district already infested with the same kind of insects or disease will not work so serious injury to the orchardists of that section as the importation of new pests would. So, in my opinion, the Secretary of Agriculture would accomplish better results by changing the proposed method of inspection to cover arrivals instead of outgoing stock.

California's system was fully investigated by C. A. Marlatt, an agent of the entomological division of the U. S. Department of Agriculture, and his observations were published in the department's "Year Book for 1896." He concludes as follows: "Such orchard inspection, with supervision of treatment in connection with a system of quarantine, will do much for Eastern fruit growers. * * * The present system in California is not a theoretical or experimental one, but the outgrowth of the practical experience

of years, and it is within the power of Eastern growers, by adopting California methods so far as they can be made to apply, to save years of experimentation, which in the end would probably bring about a similar system, but only after immense loss to the fruit interests had been insured."

That the California fruit growers are favorable to the passage of a national horticultural law was shown by their action at the last State fruit-growers' convention, held in Sacramento, where a resolution to that effect was unanimously adopted.

ALEXANDER CRAW,
Quarantine Officer State Board of Horticulture.
Clay Street Dock, San Francisco, Cal.

AGRICULTURAL REVIEW.

CALIFORNIA.

Amador.

FARMERS in the neighborhood of Ione are agitating a Farmers' Club project.

Butte.

SMUDGES.—A. D. Cutts, of the Riviera orchard, informs us, says the Gridley Herald, that the almond huds are commencing to swell. Mr. Cutts don't have much faith in the smudging methods, except early in the morning after a freezing cold night, holding that when the thermometer gets down as low as 28° the orchardist might as well go to bed. He thinks, however, that after a hard freeze, a big smudge which will throw a cloud of smoke as a sort of screen between the sun and the trees would be of value. It prevents the quick thawing of the frozen huds and shoots, acting upon much the same principle as that seen when a man holds up a snowball to his ear when it is frozen. Mr. Cutts says that the cold weather has been of great benefit to growing wheat. The slight heaving mellow and enlivens the soil, while the wheat plants stood out and spread over the ground.—Gridley Herald.

A FARMER'S COMPLAINT.—Farmers on the adobe lands in Butte county are cursing the ducks and the Board of Supervisors. Complaints are coming in every day that the web-footed pests are moving up the canal about a mile every night, as the food is exhausted toward the tules. A prominent farmer expressed his sentiments as follows: "For years we have hung out lanterns, built fires and adopted every device we could think of to keep the ducks from eating up our crops. Geese we can manage with guns, but ducks are much worse. Heretofore the market hunters have aided us materially in keeping down the numbers of ducks, but as the intelligent Board has seen fit to play into the hands of the sportsmen of San Francisco and elsewhere instead of protecting the crop of the farmer resident of his own district, we are likely to be quacked out of a crop by the ducks and their very humane protectors."—Gridley Herald.

FIGS FOR PROFIT.—In conversation yesterday with a leading fig grower, he said he was confident from his experience that figs are the most profitable crop a man can grow in the line of fruit. He can sell his fruit dried for 3 cents a pound, and as there is so little labor and so little loss, this will pay better than 7 cents a pound for dried peaches. The fig must not be irrigated. The trees must have time to grow and mature, even if it takes many years without being irrigated. The roots are then sent down deep and the trees will resist drouth. The figs will be sweet and when dry will remain in that condition. The fig is a heavy bearer and produces regular crops.—Oroville Register.

Contra Costa.

THE CROCKETT FACTORY.—The sugar refinery is pushing forward its work just as fast as circumstances will permit, and ere long Contra Costa county will have one of the best equipped sugar refineries in the State. The building is massive, the machinery is the latest and best improved in the market and is being put in to refine both cane and beet sugar.—County Paper.

Fresno.

TO STUDY THRIPS.—The Fresno *Expositor* has information that Prof. Woodworth of Berkeley will visit Fresno in April to study the thrips. "He was here," says the *Expositor*, for a day or two one year ago, when the hopper was in its height, but he came too late and the damage had already been done. The coming investigation will be a minute one, and his aim will be to make a study of the life history of the hopper, how and when it attacks the vine, and the character of the broods. There is evidence that there are seven known broods, and the study will be to learn the conditions under which they thrive and propagate. The remedies will be suggested by experiments dependent on different conditions as found in vineyards and the care and skill with which the remedies are applied.

THE VINEYARDISTS OF Fresno county thought the hard frosts of the first of this week had killed the thrip, or vinehoppers, that so badly ravaged the vines last summer. But it has turned out that the insects are still alive, and the warm afternoon sun revives them.—Times.

Humboldt.

CREAMERY BURNED.—The creamery on the opposite side of the river from Blue Lake, known as the West End Creamery, was totally destroyed by fire on Friday evening of last week. The plant was new, in fact had never run, but was about ready to start up. It was insured for \$1000. The loss will be severely felt by farmers living in that section, as milk cannot be carried across the river in the winter to the Blue Lake Creamery. Samuel Peterson was the owner of the plant.—Arcata Union.

Kings.

GRAIN GROWING WELL.—E. Jacobs, who has several thousand acres of lake lands seeded to grain, says the seed is not rotting in the ground, but is in good condition for growing on the approach of warm weather and the fall of rain. Several hundred acres of grain on shale land is up and doing well. Mr. Jacobs says he would still have his teams plowing had heavy uncultivated land. He has faith in enough rain falling to insure good crops.—Hanford Democrat.

CANNERY PROJECT AT HANFORD.—There was a meeting of farmers held in Hanford on Thursday to consider the cannery proposition. It was found that a little less than 400 tons of yellow cling peaches had been pledged at \$10 per ton, the demand of Fontana & Co. being for 700 tons to guarantee the opening of a cannery. The company, however, reduced the number of tons required to 500, and the committee are again at work with renewed vigor and with a good promise of success.—Lemoore Leader.

Monterey.

THE SOLEDAD SETTLEMENT.—According to the agreement signed by the colonists at Soledad under the auspices of the Salvation Army, the colonists will be really in a state of practical serfdom. No doubt the intentions embodied in the conditions of agreement are good, for the Salvation Army has always proved its faith by its work. But it is much to be feared that a colony formed under such conditions will not fulfill the expectations of its founders. In the United States

the law of the land affecting the relations between man and man in matter of business, and governing the general conduct and obedience of members of society, is assumed to be adequate for its purpose and not to be superseded by any private agreements. Yet by the terms of the agreement signed by the Soledad colonists, they virtually abdicate not only their legal rights but their manhood to a considerable extent.—San Jose Herald.

BARE PASTURES.—Cattle are dying in large numbers in the southern end of Monterey county. From Kings City up this way the stock are not suffering yet, but south of that place and down into San Luis Obispo county the devastation is something fearful. There is practically nothing for the animals to eat in that locality and all of the stock raisers who have any pasturage elsewhere are endeavoring to move their live stock before they all perish.—Salinas Democrat.

Orange.

CREAMERY EXPERIENCE IN ORANGE.—Few Orange county industries have made advances during the past two years that the creameries have, especially in the lowlands in the near vicinity of Santa Ana, where the industry has been most notable, and still is in its infancy. Westminster has three large creameries in operation, and they distribute thousands of dollars with the dairymen of that section every month. Los Bolsas, Fairview and Tustin each have one, of which the same can be said.—Santa Ana letter.

THE Chino company will contract for 4000 acres in Orange county, to be planted to beets.

Placer.

A FARMERS' CLUB has just been organized at Loomis.

Riverside.

GREEN ORANGES.—By way of demonstrating the bad policy of shipping green oranges to market, the Riverside *Press* prints the following letter written by an Indiana woman to a friend at Riverside: "What is the matter with the market for California oranges? Everybody here buys Florida oranges in place of California fruit, and I don't blame them, for the California oranges are not fit to eat. I think the California people make a great mistake by shipping oranges so early, when they are green and sour. The people here in the East buy them once or twice and then remark that they don't want any more California oranges, and most of the time Florida oranges sell for 10 or 15 cents more a dozen. I have not bought many this year, for I do not care enough for them; but, of course, what fruit I have bought has been from California, for I could not go back on my own product. I told Lora to tell you to send me a couple boxes of oranges as soon as you had a chance. I want to show some of them what good California oranges are."

COUNTY RABBIT BOUNTY.—The new rabbit bounty ordinance goes into effect next Tuesday, and the Winchester *Recorder* remarks that, although the bounty is lower than the one in force three years ago, good marksmen can make money shooting rabbits even at five cents a scalp, and will not let the opportunity slip to indulge in some good sport, make enough money to pay them for their time and win the gratitude of the farmers at the same time. In the foothills north, south, east and west of town, hunters will find no scarcity of rabbits. A. Domenigoni is one of the many farmers who will undoubtedly be glad to welcome hunters at any time. Fully ten acres of his grain this year were destroyed by rabbits, and revenge is sweet. Wm. Newport, in the Meniffee valley, also has a real grievance against the rabbit and his kind, as he estimates his loss from that source at \$1000 this season.—Riverside Press.

San Benito.

SUGAR BEET INDUSTRY.—The sugar factories at Salinas and Watsonville will need all the beets that will be produced this year near Gilroy and in the San Juan and Hollister valleys. Contracts have been made with owners and lessees of extensive tracts of land south of us, and a large acreage has been prepared for seeding in the spring. Gilroy begins by appropriating 2500 acres for the season's crop.—Gilroy Advocate.

Santa Barbara.

"ALL PLOWED UP."—All of Santa Maria is plowed up and planted, and now some of our industrious ranchers are spreading out with their labors into other parts.—Ramon Sentinel.

Santa Cruz.

PAJARO VALLEY FRUIT NOTES.—Eastern apple shipments to date are 245 carloads. * * * London apple shipments to date, 73 carloads. * * * San Francisco has been this year a dumping ground of apple trash, but she is not going to be so any more. The heavy stock of trash has cut the price of good stock all through the season. If poor stock had been destroyed at home and only good apples sent to market we believe the packers would have cleared more money. The marketing of trash is generally a loss of the investment in boxes and labor.—Pajaronian.

Solano.

Right here in California where fruit is raised in abundance our people do not use it as much in proportion as do people of other countries. This is a mistake. Where dried fruit is cheap and plentiful it ought to be used largely and especially at this time of the year, when fresh vegetables are scarce and salty meats and bulky foods make up the principal articles of diet. Dried fruits of all kinds contain acid properties which are highly conducive to good health.—Dixon Tribune.

Sonoma.

Porter Ashe and others have leased the Bell ranch near Sonoma, and will use it as a horse-breeding farm.

Tehama.

PLAIN figures show the weight of turkeys shipped from Corning this season to be eighty tons, at a worth of \$300 per ton or a total money value of \$24,000 for the eighty tons. On the other hand, the wheat grown last season round here is set at 160,000 sacks, at a value of \$1.75 per sack, making a total of \$280,000 for wheat.—Corning Observer.

Tulare.

CITRUS ORCHARDS ALL RIGHT.—Notwithstanding the long spell of cold weather we have had in this county, the trees in the orange and lemon orchards have not suffered. Some tender shoots have been nipped, some limbs in the nurseries have lost a part of their leaves, but no serious injury has been reported from any part of the county.—Visalia Delta.

Yolo.

A PEST OF WILD DUCKS.—Herb Coil was greatly surprised Wednesday morning when in driving over his lower ranch he found a bald spot of nearly forty acres. When he last saw it the evening before there was a beautiful stand of grain, between three and six inches high. During the night wild ducks ate it off nearly as close to the ground as a band of sheep would. Wednesday night he detailed three men with shotguns and lanterns to patrol the fields and then came to Woodland and extended a general invitation to all the hunters in town to go down and assist in the roundup. Several accepted the invitation and there was quite a slaughter. The complaint is general in this respect, quite a large number of farmers having suffered from the devastation caused by the feathered tribe.—Woodland Mail.

THE railroad company is about to erect a pumping plant in Capay valley, capable of irrigating all the lands recently planted there.

Synopsis of the Report of the State Board of Agriculture.

The annual report of President Chase of the State Board of Agriculture, which has just been given to the public, is a comprehensive study of the agricultural industry of California during 1897.

Wheat and Barley.—Mr. Chase's estimate of the wheat crop is 31,449,381 bushels, as against 29,655,174 bushels for 1896. I find, he says, the total exports of wheat for the year to be 9,508,000 cents, or about 16,000,000 bushels, as against about 12,000,000 cents in 1896. Exports of flour for the year amounted to 870,000 barrels, as against 1,170,000 in 1896, the decrease having been about 200,000 barrels to Australia and 100,000 to China.

There is not much difference in the yield of barley as compared with that of 1896, and the exports for the year amounted to 3,405,000 cents, or almost 450,000 less than in 1896. The European demand for our best barley still continues, and prices ranged from 90 cents for feed to \$1.15 per cental for export.

While it is quite early to get the exact acreage for 1898, we are safe in saying that there is a very marked increase in wheat acreage for the coming season. With a normal rainfall from this time on we should have the largest crop since 1889, when the yield for California was 40,000,000 bushels, as all available land in the wheat-growing counties of the State had been seeded.

In the opinion of the Board the conditions of trade look most favorable to the wheat-growing industry in this country. * * * In our opinion, says the report, it will require at least two good crops the world over to accumulate a surplus that would reduce prices as low as they were in 1895. From present indications America will have 150,000,000 bushels of wheat for export at exceedingly good prices, and as the producer will, as he did in 1897, get the benefit, we hope for a prosperous year, as a stiff demand for staples insures extension in all lines of trade.

From reports thus far received from other large wheat-producing countries, we note a very perceptible falling off in yield. Australia's crop is estimated at only about 9,500,000 bushels, as against a normal yield of about 25,000,000 bushels. A large part of this deficit will be supplied by California. Telegraphic advices show that the shortage of harvest in Austria-Hungary is much greater than was anticipated, and that the imports for food products alone will be \$100,000,000 in value.

When it is realized that the wheat yield of these countries for the past five years has averaged 197,605,811 bushels annually, from which has been exported 45,000,000 bushels, it will be readily seen that they are important factors in the world's grain trade. A shortage of this magnitude is quite significant, and would indicate that America and India will again be called upon to make good the European deficit.

Thus it will be seen that the outlook for wheat-growing in California is healthy and promises profitable returns to the grower.

Dairying.—California's export trade by sea is on the increase, as is shown by the following table:

DOMESTIC EXPORTS (BUTTER AND CHEESE) BY SEA.

| Destination. | 1897. | | 1896. | |
|-----------------------|---------|----------|---------|----------|
| | Pounds. | | Pounds. | |
| | Value. | Value. | Value. | Value. |
| British Columbia..... | 86,758 | \$14,246 | 65,011 | \$10,341 |
| Costa Rica..... | 5,410 | 1,037 | 1,520 | 241 |
| Guatemala..... | 19,180 | 3,518 | 16,170 | 2,960 |
| Mexico..... | 32,151 | 6,067 | 20,995 | 3,987 |
| China..... | 35,010 | 6,116 | 17,849 | 3,310 |
| Hongkong..... | 5,830 | 1,136 | 2,540 | 516 |
| Japan..... | 103,989 | 19,064 | 76,816 | 13,821 |
| French Oceania..... | 16,257 | 3,086 | 15,506 | 3,034 |
| Hawaiian Islands..... | 153,375 | 30,256 | 103,979 | 19,597 |
| Other countries..... | 17,160 | 2,777 | 10,440 | 1,904 |
| Totals..... | 475,120 | \$88,203 | 330,826 | \$59,741 |

| Destination. | 1897. | | 1896. | |
|-----------------------|---------|----------|---------|----------|
| | Pounds. | | Pounds. | |
| | Value. | Value. | Value. | Value. |
| British Columbia..... | 14,100 | \$ 1,532 | 8,753 | \$ 1,065 |
| Costa Rica..... | 4,870 | 517 | 4,305 | 504 |
| Guatemala..... | 15,290 | 1,792 | 17,340 | 2,154 |
| Mexico..... | 29,460 | 3,222 | 26,680 | 3,085 |
| China..... | 46,500 | 5,064 | 34,005 | 3,822 |
| Hongkong..... | 90,665 | 9,980 | 53,427 | 6,140 |
| Japan..... | 29,950 | 3,205 | 43,495 | 4,953 |
| French Oceania..... | 4,975 | 560 | 5,013 | 626 |
| Hawaiian Islands..... | 116,405 | 12,626 | 103,780 | 12,031 |
| Other countries..... | 8,254 | 924 | 7,153 | 860 |
| Totals..... | 360,109 | \$39,452 | 304,041 | \$35,270 |

From the reports of the dairy bureau it will be found that our yield of butter this year was 25,248,352 pounds, as against 31,605,440 pounds in 1896; that 679,000 pounds of butter came into this State by rail, and that receipts of cheese from coast States increased over half a million, with Eastern importations aggregating 646,720 pounds. * * * There are now over 200 creameries in the State, and room for 200 more. * * * The highest scores made at the State Fair dairy exhibit for 1897 were

98.34 for butter and 99.50 for cheese, showing a degree of purity equal to any.

Cattle and Sheep.—We have in this State only about 3,000,000 sheep. The wool product for 1897 amounted to 32,500,000 pounds, at an average price of 12 cents, equaling nearly \$4,000,000 for this output. * * * The outlook for sheep raising is good, and there is an opening for investment of capital in this industry in California. The publicity given this and kindred subjects by the State Board of Agriculture from time to time has, in more than one instance, caused extension in profitable agricultural pursuits, and we will continue along the same lines until California produces not only a sufficiency for home consumption, but also of many products a surplus for export.

The Horse Industry.—After a review of the recent history of this industry the report says: We must begin anew, and produce a variety of breeds for which there is and always will be a steady demand. * * * We can raise horses as cheap as cattle, and the latter are being exported in great numbers. Now, then, if we but know the requirements of purchasers abroad and cater thereto, we will create a new demand for this valuable animal, and infuse new life into the industry. * * * We, of California, have an excellent foundation in our matrons to cross upon other breeds, giving them that style and uniformity of make-up which have characterized the trotter; hence we hope to see breeding of horses take in this State a new start, based upon the requirements of the markets, to the end that the American horse will have a foothold in the markets of the world.

Sugar Beets.—The board is of the opinion that there is coming in California a great development of the beet-sugar industry. Four beet-sugar factories are now operating in this State, and the output for the year 1897 was 78,000,000 pounds of sugar, as against 65,000,000 pounds in 1896 (with one small factory in addition), showing a 20 per cent increase. California's sugar output is 1.7 per cent of all kinds of sugar consumed in the United States; we have facilities for extension sufficient to supply at least 50 per cent of the amount used by the people of this nation without encroachment on any of our staple products. Being one of the firm staples, it will always bring a reasonable price. Returns are so quick from time of planting that not half the year is gone when land is cleaned of the crop and money returned therefor. The sugar product, having the advantage of a protected market, leaves little chance for loss, hence capital is bound to seek investment therein.

Fresh Fruit Matters.—The total number of cars shipped in 1897 was 5323, being an increase of 31½ per cent over 1896. The destination and number of cars to each place, as compared with 1895 and 1896, were:

| | 1895. | 1896. | 1897. |
|-------------------|-------|-------|-------|
| Chicago..... | 1,473 | 1,007 | 1,482 |
| New York..... | 862 | 1,055 | 1,246 |
| Boston..... | 279 | 471 | 595 |
| Philadelphia..... | 82 | 90 | 211 |
| Minneapolis..... | 124 | 147 | 180 |
| Baltimore..... | 37 | 5 | 16 |
| Cincinnati..... | 15 | 2 | 20 |
| Kansas City..... | 91 | 81 | 84 |
| Montreal..... | 44 | 81 | 98 |
| New Orleans..... | 75 | 85 | 81 |
| Denver..... | 148 | 136 | 98 |
| St. Louis..... | 78 | 68 | 60 |
| St. Paul..... | 109 | 91 | 120 |
| Omaha..... | 176 | 85 | 166 |
| Cleveland..... | 29 | 10 | 37 |
| Pittsburg..... | 26 | 25 | 40 |
| Buffalo..... | 15 | 7 | 15 |
| Milwaukee..... | 42 | 32 | 52 |
| Minor points..... | 863 | 569 | 719 |
| Totals..... | 4,568 | 4,047 | 5,323 |

Varieties and number of cars:

| | 1895. | 1896. | 1897. |
|-----------------|-------|-------|-------|
| Pears..... | 1,187 | 1,624 | 1,640 |
| Peaches..... | 1,289 | 976 | 1,316 |
| Grapes..... | 1,010 | 712 | 1,100 |
| Plums..... | 465 | 407 | 742 |
| Apricots..... | 162 | 172 | 177 |
| Cherries..... | 180 | 88 | 239 |
| Apples..... | 105 | 53 | 71 |
| Quinces..... | 13 | 8 | 24 |
| Figs..... | 0 | 2 | 3 |
| Nectarines..... | 5 | 1 | 10 |
| Persimmons..... | 0 | 0 | 2 |
| Mixed..... | 152 | 9 | 9 |

From estimates based upon prices of 1897, we place the aggregate value of the orchard output of California at \$21,289,545, computed as follows:

| | |
|------------------------------------|--------------|
| Citrus fruits..... | \$3,850,000 |
| Prunes..... | 2,900,000 |
| Dried fruit other than prunes..... | 2,600,000 |
| Raisins..... | 2,275,000 |
| Deciduous fruits..... | 2,000,000 |
| Nuts..... | 600,000 |
| Canned fruits..... | 7,054,545 |
| Total..... | \$21,289,545 |

Comparing the values of California's productions for the past season, it will be observed that the orchard products of this State are second only to wheat. * * *

At present prices for cured fruits the amount returned from sales thereof pays but little over cost of picking and packing, leaving no returns for investment and time of grower. The exception is made in citrus fruits by reason of the growers of this product having organized and perfected a system that controls to a great extent the sale of their crop, and then the failures of the Florida crop have enabled

them to establish themselves on a better footing, and we now have what promises to be a permanent market, as the importations of the foreign product is becoming less each year.

By references made hereto we do not intend to convey the idea that our fruit industry is a failure, but only is so far as our marketing methods are concerned. If the grower delegates all his work and financial business to agents, permitting extraordinary charges and non-remunerative sales, he is simply not capable, in a business sense, to conduct his affairs, and the sooner he finds it out the better it will be for him.

It is possible that the two great reasons why the grower received better returns this season than in former years were, first, the agitation that existed throughout the season against consignments, thereby causing a falling off in shipments; and, second, the f. o. b. purchases made by shippers to supply demands of regular customers and to keep prices up to encourage consignments; which shows conclusively to our mind what we have always maintained, that if the growers would combine sufficient to reduce consignments very materially purchases would be made f. o. b. There is too much money invested in business plants, and too large a trade established throughout the East, to have it otherwise, and it rests wholly with the growers to make their interest one of the first in this great State. There are strong fortifications to overcome, but by organization and concentration of power the enemy can be routed. Until something of this kind is done we would not advise further extension of tree planting in this State.

Cured Fruits.—It is estimated that the total pack of fruit and vegetables for the season of 1897 was 2,351,515 cases, containing twenty-four cans to the case, or a total of 56,436,360 cans. In estimating the cash value of this output, we have taken an average of \$3 per case—based upon the following figures, which show the trade prices that ruled: Extras sold at \$4.25, extra standards at \$3 and standards at \$2.50 per case—would give us \$7,054,545 from this agricultural adjunct of trade for the season of 1897.

This industry, not unlike other lines of trade, has keenly felt the stringency of the times that commenced with the year 1893, and its progress for that reason has not been what it should. It was not until the year 1896 that any improvement was shown; the year 1897 shows quite a good-sized pack with a low margin of profit to the packer; but as the market continues firm and stocks are about all out of the canners' hands, the prospects seem bright for a prosperous season for the year 1898. The following table shows the pack by counties:

CALIFORNIA CANNED FRUIT AND VEGETABLE PACK (ESTIMATED) FOR 1897.

| Counties. | Cases. |
|--------------------|-------------|
| Alameda..... | 360,000 |
| Butte..... | 35,000 |
| Fresno..... | 30,000 |
| Los Angeles..... | 197,000 |
| Marin..... | 15,000 |
| Napa..... | 25,000 |
| Placer..... | 8,000 |
| San Francisco..... | 950,515 |
| Counties. | Value. |
| Santa Clara..... | 361,000 |
| Sacramento..... | 140,000 |
| Sonoma..... | 50,000 |
| Solano..... | 35,000 |
| Shasta..... | 10,000 |
| Tulare..... | 40,000 |
| Yuba..... | 95,000 |
| Total..... | \$2,351,515 |

Viticulture.—Under this head the Board supports heartily the system of marketing inaugurated by the California Winemakers' Association. The estimated vintage of dry wines for 1897 is 25,750,000 gallons, of which nearly two-thirds is controlled by the Corporation, besides a considerable proportion of the 1896 vintage.

Hop Culture.—The crop of California for 1897 was about 45,000 bales, as against 35,347 bales in 1896, and with prices doubled gave the growers a very considerable increase in return. This industry looks healthy, as out of the entire 80,000 bales for the two years, less than 2000 remain in the growers' hands.

Miscellaneous.—Under the head of general subjects of agricultural interest the report discusses briefly the hemp industry, for which it believes California to be peculiarly adapted. Practical tests, says the report, have shown that on our rich bottom lands it is a very successful crop; the plant grows vigorously and attained a height of 22 feet, and measuring at the base of the plant, 12 inches in circumference. This immense growth was made in Butte county, where the hemp was planted thinly for seed; but where sown thicker for fiber it averaged 16 feet in height and 1½ inches in circumference. This crop was grown without rain or irrigation, and produced about 1½ tons to the acre. The test was made on a tract of 200 acres, and the yield was about 300 tons. We received samples of this fiber, and it was pronounced by experts to be superior to any grown in the world.

Good Roads.—We notice with commendation the action taken in Sacramento county by the issuance of \$75,000 in bonds for road improvement. The bond plan was first suggested, we believe, by this Board, when we advised in one of our reports the formation of road districts, to raise funds for the building of permanent roadways. We predict that every county

in the State will follow the example set by Sacramento when the road is completed, thereby showing the farming community what a permanent roadway means to the prosperity of those living adjacent thereto.

An object lesson is the most forcible argument that can be used. Money thus expended, even if a debt is loaded on us, will improve the facilities of a section thus favored to an extent that cannot be readily estimated. We hope for more bond issues for road building.

THE VINEYARD.

Vine Pruning.

NUMBER IV.—CONCLUDED.

By F. T. BIOLETTI, in Bulletin 119 of the Experiment Station of the University of California.

Summer Pruning.—Some form of summer or green pruning is practiced in most California vineyards, if in the term we include all the operations to which the green shoots are subjected. There seems, however, to be little system used, and very little understanding of its true nature and object. In general, it may be said that green pruning of the vine is least needed and often harmful in warm, dry locations and seasons and of most use under cool and damp conditions. The principal kinds of green pruning are: 1. Pinching. 2. Suckering and sprouting. 3. Topping. 4. Removal of leaves.

Pinching consists in removing the extreme growing tip of a young shoot. It is necessary to remove only about half an inch to accomplish the purpose of preventing further elongation of the shoot, as all growth in length takes place at the extreme tip. The immediate result of pinching is to concentrate the sap in the leaves and blossoms of the shoot, and finally to force out the dormant buds in the axils of the leaves. It has been found useful in some cases to combat coulure or dropping with heavy-growing varieties, such as the Clairette Blanche. It is also of use in preventing unsupported shoots from becoming too long while still tender and from being broken off by the wind. It can, of course, be used only on fruiting shoots, and not on shoots intended for wood for the following year.

Suckering is the removal of shoots that have their origin below or near the surface of the ground. The shoots should be removed as thoroughly as possible, the enlargement at the base being cut off in order to destroy the dormant basal buds. An abundant growth of suckers indicates either careless suckering of former years, which has allowed a mass of buds below the ground—a kind of subterranean arm—to develop, or too limited an outlet for the sap. The latter may be due to frost or other injuries to the upper part of the vine, but is commonly caused by too close pruning.

Sprouting is the removal of sterile shoots or "water sprouts" from the upper part of the vine. Under nearly all circumstances this is an unnecessary and often a harmful operation, especially in warm, dry locations. An exception may, perhaps, be made under some conditions of varieties like the Muscat of Alexandria, which has a strong tendency to produce "water sprouts," and, growing through the bunches, injure them for table and drying purposes.

Water sprouts are produced from dormant buds in the old wood; and as these buds require a higher sap pressure to cause them to start than do the fruitful buds, the occurrence of many water sprouts indicates that too limited a number of fruitful buds has been left upon the vine to utilize all the sap pumped up by the roots. To remove these water sprouts, therefore, while they are young is simply to shut off an outlet for the superabundant sap and thus to injure the vine by interfering with the water equilibrium, or to cause it to force out new water sprouts in other places. Any vigorous vine will produce a certain number of water sprouts, but they should not be looked upon as utterly useless and harmful because they produce no grapes. On the contrary, if not too numerous, they are of positive advantage to the vine, being so much increase to the feeding surface of green leaves. Water sprouts should be removed completely during the winter pruning, and the production of too many the next year prevented by a more liberal allowance of bearing wood.

Topping, or cutting off the ends of shoots, is done by means of a sickle or long knife. At least two or three leaves should be left beyond the last bunch of grapes. The time at which the topping is done is very important. When the object is simply to prevent the breaking of the heavy, succulent canes of some varieties by the wind, or to facilitate cultivation, it must, of course, be done early, and is well replaced by early pinching. These objects are, however, better attained by appropriate methods of planting and training. Early topping is inadvisable because it induces a vigorous growth of laterals which make too dense a shade, and it may even force the main eyes to sprout and thus injure the wood for the next year. The legitimate function of topping is to direct the flow of food material in the

vine first into the fruit and second into the buds for the growth of the following year. If the topping is done while the vine is in active growth, this object is not attained; one growing tip is simply replaced by several. In this way, in rich, moist soils, vines are often, by repeated toppings, kept in a continual state of production of new shoots; and as these new shoots consume more food than they produce, the crop suffers. Not only does the crop of the current year suffer, but still more the crop of the following year, for the vine devotes its energy to producing new shoots in the autumn instead of storing up reserve food material for the next spring growth. If, on the other hand, the topping is done after all leaf growth is over for the season, the only effect is to deprive the vine of so much food-absorbing surface.

The topping, then, should be so timed that, while a further lengthening of the main shoot is prevented, no excessive sprouting of new laterals is produced. The exact time differs for locality, season and variety, and must be left to the experience and judgment of the individual grower.

Removal of Leaves.—In order to allow the sun to penetrate to and aid the ripening of late grapes, it is often advisable late in the season to lessen the leafy shade of the vine. This should be done by removing the leaves from the center of the vines, and not by cutting away the canes. In this way only those leaves are removed which are injurious, and as much leaf surface as possible is left to perform the autumn duty of laying up food material for the spring. The removal of leaves should not be excessive; and, if considerable, should be gradual, otherwise there is danger of sunburn. It is best, first, to remove the leaves from below the fruit. This allows free circulation of the air and penetration of the sun's rays which warm the soil and are reflected upon the fruit. This is generally sufficient, and in any case only the leaves in the center of the vine—and especially those which are beginning to turn yellow—should be removed.

Treatment of Varieties.—In the list of varieties which follows, an attempt has been made to indicate the mode of pruning which is likely, in the light of our present knowledge, to give the best results for each variety. It should be understood, however, that it is to some extent tentative and provisional. Many of the varieties have proved successful in certain soils and locations when pruned in the way indicated, but others have never, so far as we know, been tested in the way proposed. As these latter, however, have proved more or less unsuccessful under the common methods of treatment, the method proposed is the one which seems most suitable to their habit and general characters. It seems probable that the tendency to coulure of some varieties, such as the Muscat, Malbeck, Merlot, Clairette, etc., can be combated to a great extent by appropriate methods of pruning and training. Unevenness of ripening and liability to sunburn of Tokay, Zinfandel, etc., can doubtless be controlled by the same means.

Very few varieties succeed under strictly short pruning—that is, cutting back to one and two eyes—so that for most of the varieties in the first category the modification of short pruning, which gives fruit spurs of three or four eyes and wood spurs of one eye, is recommended.

Type 1. Charbono, Cinsaut, Mataro, Carignane, Grenache, Petit and Alicante Bouschet, Aramon, Mourastel, Verdai, Ugni Blanc, Folle Blanche, Burger, Zinfandel, Gruner Veltliner, Peverella, Zierfahndler (?), Rother Steinschiller (on poor soils), Slankamenka, Green Hungarian (on poor soils), Blue Portuguese (on poor soils), Tinta Amarella, Moscatello Fino, Pedro Ximenes, Palomino, Beba (?), Peruno, Mantuo, Mourisco Branco, Malmsey, Mourisco Preto, Feher Szagos, Muscat of Alexandria, Barbarossa.

Type 2. St. Macaire, Beclan (longer or shorter, according to richness of soil), Teinturier male, Mondeuse, Marsanne, Chasselas, Muscatel, Grosse Blau, Sauvignon Blanc, Sauvignon Vert, Nebbiolo, Fresa, Aleatico.

Type 3. Cabernet Sauvignon and Cabernet Franc (on poor soils and hillsides), Verdot, Tannat, Gamai Teinturier, Gros Mansenc, Pinots, Meunier, Gamais, Pinot Blanc, Pinot Chardonay, Rulander, Affenthaler, Johannisberger, Franken Riesling (on hillsides), Kleinberger, Traminer, Walschriesling, Rothgipfler, Lagrain (?), perhaps short, Marzemino, Blue Portuguese (on rich soils), Barbera, Moretto, Refosco, Tinta de Madeira, Tinta Cao, Verdelho, Boal.

Type 4. Green Hungarian, Rother Steinschiller (on rich soils), Neiretta, Mission, West's Prolific, Robin Noir.

Type 5. St. Macaire and Mondeuse (on rich bottom soils), Tinta Valdepenas, Marsanne, Clairette Blanche, Semillon, Sauvignon Blanc (on rich soils), Muscadelle du Bordelais, Vernaccia Bianca, Furmint Bakator, Tadone, Gros Colman, Black Morocco (?), Cornichon (?), Emperor, Tokay (?), Almeria, Pizzutello, California Black Malvoisie.

Type 6. Malbec, Petite Sirah and Serine, Cabernet Sauvignon and Cabernet Franc (on rich bottom soils), Merlot, Gros Mansenc (?), on rich bottom soils, Chauche Noir, Bastardo, Trousseau, Ploussard, Etraie de l'Adhui, Chauche Gris, Franken Riesling (on rich soils).

FRUIT PRESERVATION.

Evaporated Potatoes.

J. D. Elmendorf of Spokane, Wash., says the *Review*, has recently been conducting a series of experiments in evaporating potatoes with a view of engaging in the business should the demand for the product justify. He has been able to secure an excellent quality of evaporated potatoes, which, when cooked, taste like and have all the chemical elements of the evaporated vegetable.

The experiments were conducted at Waverly, in the Palouse country. A steam evaporator that was put in some time ago to dry prunes was used in the experiments. The potatoes were first peeled and sliced, then dipped at once into salt water. This was to prevent oxidization. Then the slices were spread on trays and dipped into boiling water.

They were left there about ten minutes to partially cook and then removed and placed in an evaporator. After remaining in the drier about eight hours, the potatoes are ready for the market. It takes about 100 pounds of potatoes to make seventeen pounds of dried product. Mr. Elmendorf said: "After we had some of the potatoes tasted, to see if they retained their flavor, etc., we took a teacupful of the dried slices and boiled them in the ordinary manner. When they had cooked, they could be readily mashed, and could not be distinguished from the ordinary mashed tubers. This will be probably the only way prospectors will wish to cook the vegetable. We learned that the sliced potatoes are better than the granulated evaporated potatoes in cooking, for while the former may be boiled and mashed into a cohesive shape, the latter when boiled form a sort of potato soup. It is almost impossible to boil the moisture away without burning the vegetable. In the early spring, possibly in February, we may go into the business on a small scale and dry a few carloads, if the demand will warrant us in doing so. The evaporated potatoes now sell for 12 cents a pound, which does not leave a large margin of profit. One reason why the cost of evaporating potatoes is high is that the industry is a comparatively new one and the appliances are extremely crude. Much of the work must be done by hand instead of by machinery.

If the Spokane route to the Klonkike prove popular, and there is a demand for the product, Mr. Elmendorf will go ahead and evaporate any quantity. There is an evaporator at Colfax. The operator said that if the demand was large enough he would join in the business. He has experimented with drying other vegetables with good success. String beans dry well. Squash has been dried successfully and makes a delicious product.

An Oregon Evaporator.—Mr. Adam Fleckenstein of Woodlawn, Oregon, is following a system which appears to the *Oregon Agriculturist* to have some advantages over any other that it has knowledge of. For washing the potatoes he has a large open cylinder revolving in a tank of water. The cylinder will take a sack of potatoes at a time, and it is rotated by a crank. The potatoes are in this way washed very quickly. He then places the potatoes on trays and puts them in a steam box and steams until thoroughly done. They are then allowed to cool. When cold, they are peeled and dumped on a tray made with quarter-inch mesh wire. This tray is placed over a regular evaporator tray on which cheese cloth is spread. A piece of board about 3 inches wide and 8 inches long, fitted with a handle that can be gripped with both hands, is used to force the potatoes through the upper tray onto the lower one. It is then very little work to spread the potato uniformly on the lower tray, and it is ready for the evaporator. There is a great deal less waste in this way than when the potatoes are peeled raw. The character of the dried product is also believed to be superior in quality. Both Mr. Fleckenstein and one of his neighbors who has adopted the system secure about twenty-three pounds of dried potato to the sack.

Dried California Prunes.

The dried plum and prune trade is rapidly taking up a leading position, and bids fair to prove a gigantic feature of the fruit trade of the future. As is getting more generally known, the Californian fruit growers have made a bold bid for the major portion of the trade, and will undoubtedly have what they seek. The French prune shippers have felt alarmed at the headway the Californian prune growers have made. They now send their supplies into France freely, and the fruits meet a ready sale and good reception on account of their quality alone. So successful have the shippers been during the past year that they have decided to deal with the business on a more extensive scale, so that next year important developments may be expected. The dried plum and prune business is an important one. We should like to see it developed as much as possible. The fruit thus preserved is wholesome, nutritious and of great dietetic value. At present we have supplies on the English markets from France, California and Bosnia. For years the choice bottled "Imperials" brand have

had the run of the trade, and it will be astonishing to find the California prune senders eclipsing this well known brand. It is clear to our mind that, so far as one or two different sorts of fruits are concerned, both French and dried, that the French producers will have to stand against the finest supplies of fruit which the skill of the California fruit grower can raise and preserve. Whether they can hold their own, only the future can show.—London Fruit Grower.

THE SWINE YARD.

The Government Proclaims a Cure for Hog Cholera.

One of the most important announcements ever made by the U. S. Department of Agriculture conveys the welcome information that hog cholera and swine plague, two diseases which have baffled treatment and occasioned losses amounting to many millions, are demonstrated to be amenable to an anti-toxin virus which is both preventive and curative in its effects. California has been lightly injured by these diseases because of the superior sanitary conditions under which our hogs are grown in their open-air life; but still California has lost enough to make our swine growers keenly alive to the import of the announcement.

Confidence of the Secretary of Agriculture.—James Wilson, Secretary of Agriculture, is credited with speaking on Jan. 15 as follows: "The Department of Agriculture is satisfied that the beginning of the end of hog cholera has been reached. Experimentations with inoculation have been carried on throughout the summer in Page county, Ia., and in other places, but those in the locality named give great promise. The department first received a report from the scientists at work there that 65 per cent of the herds were being saved, then that 75 per cent were being saved, and the latest reports just to hand show that 82 per cent were saved, while 85 per cent of the herds died where the new remedy was not used. Scientists in the department are satisfied that this percentage can be increased to 90 very easily."

The Government Should Furnish the Serum.—Secretary Wilson continues: "It will be necessary to build sheds at once and tie up the animals used in preparing serum. Dr. Salmon, chief of the Bureau of Animal Industry, estimates that it will cost about 10 cents to prepare a dose of serum under the present arrangements—that is, enough for the inoculation of one hog. The Government, in my opinion, should bear the expense until the people are well satisfied that the remedy is efficacious and is a sure cure for cholera. After the merits of the serum have been established, it will be proper to permit commerce to take it up and supply the market. The danger of allowing private enterprise to take up its manufacture at present is apparent. Some unscrupulous dealers might prepare an inferior article, which would not only entail heavy loss upon the farmers who used it, but would turn them against the genuine serum, which seems to be an exceptionally meritorious article. The department considers hog cholera relief by inoculation as beyond the experimental period, but it will be necessary for the department to continue experiments for some time, until the people become assured of the efficacy of the new remedy and understand the proper method of its application."

Dr. Salmon's Statement.—The following letter, describing the Page county experiments, have been sent to the Secretary of Agriculture by Dr. Salmon, chief of the Bureau of Animal Industry: "I have the honor to state concerning the experiments made during the past summer for the control of the hog cholera that the treatment with anti-toxin serum gave even better results than were expected from it, and that this method constitutes a satisfactory plan for treating the disease and preventing by far the greater part of the loss. This method is the outgrowth of experiments that have extended over the past twelve years. Every point in the process is based upon careful and extended scientific experiments, and there can consequently be no doubt of the efficacy of the treatment, although many details in the preparation of the serum will no doubt be modified."

The Serum.—This serum is made upon the same principle as the anti-toxin of diphtheria, which has given such extraordinary results in the treatment of that disease. We have used both horses and cattle and have obtained good results from both species of animals. In order to obtain the serum a horse or cow is inoculated with the hog cholera virus, beginning with small quantities and repeating the inoculation with larger doses after suitable intervals of time, until the resistance of the animal is raised to the highest practicable point. The blood of such an animal when injected under the skin of swine has both a preventive and curative action.

Two Diseases Met by One Treatment.—As there are two diseases of swine—hog cholera and swine plague

—to be combated, we have prepared a compound serum which acts as a preventive and cure for both diseases. This serum was first tested on small animals in the laboratory and found to prevent the disease in them, and last fall it was tested in Page county, Ia., upon eight herds of swine containing 278 animals. The owner of one of these herds, containing thirty-four animals, did not carry out the directions for the care of his animals and began treating them with some proprietary medicine. He also is said to have killed some for examination, so that with this one herd it is difficult to learn the exact effect of the remedy. However, including this herd, there were but fifty-nine animals lost out of 278, or 21.3 per cent, while in untreated herds which were kept under observation about 85 per cent of the animals died. Leaving this one herd, from which definite returns as to cause of death could not be obtained, out of the calculation, there were 244 animals treated, of which eighty-six were sick and only thirty-nine died. Consequently, 82.8 per cent of the animals in these herds were saved. As a better quality of serum can undoubtedly be prepared with more experience, it is reasonable to suppose that this percentage can be maintained hereafter. The cost of this serum is about 10 cents per head of animals treated, one dose being sufficient.

Government Distribution.—I would recommend that the serum, at least for the next year, be made by the bureau and distributed in large quantities, in order to demonstrate its efficacy upon a more extended scale. If this is not done, its manufacture will be undertaken by numerous private concerns, which will charge exorbitant rates and which will be tempted to supply an inferior product. As the farmers will have no way of determining the quality of this before purchase they will be greatly imposed upon and may lose faith in the remedy before they have properly tested it. The losses from cholera have been enormous during the past few years, reaching, according to some estimates, \$100,000,000 a year. Congress has appropriated an abundance of money for the investigations, and now that a remedy has been discovered, it will be of even more benefit to the stock raisers of the country to put that remedy in their hands at as early a date as possible. It requires from three to four months to put a horse or cow in condition to supply the serum, consequently any action taken for this year should be begun soon. In my opinion, the bureau should be in position to furnish 2,000,000 doses of serum during the next year. To do this would require an expenditure of about \$200,000. I would therefore recommend that Congress be asked to add this amount to the appropriation for the bureau, and to make \$100,000 of it immediately available.

THE DAIRY.

Reasons Why a Dairy School Should Be Established.

By WM. H. ROUSSEL, Manager of the Dairymen's Union, at the January meeting of the San Francisco Farmers' Club.

During the past six years California has advanced in the manufacture of butter so as to place herself on almost an even basis with other countries, but the advancement seems to have taken place only so far as the appliances used in the manufacture of butter are concerned, these having been improved upon from time to time by those experienced in this particular line of machinery and also by creamerymen and butter makers, who being thoroughly conversant with the more improved methods of manufacture, adopted the improvements.

The First Creameries.—Now, when the creameries were first built upon the Pacific coast, it was a difficult matter to induce dairymen to patronize the same, and it was almost impossible to convince the old-time dairyman and butter maker that the creamery process would not only bring them a better result, but a better quality of goods. It may seem strange to the average person that under these conditions it was possible to secure a creamery at all, but when a few creameries were built and the product of the same forwarded to market and sold from 4 to 5 cents above the average price of dairy butters in the vicinities of the creameries, the dairymen from other sections were anxious to have a creamery in their locality, although still believing that it was impossible to manufacture a superior article in the creamery to that they were already manufacturing in their dairies, but inasmuch as the creamery secured for them a better price they were willing to try that method, the only inducement being an increased revenue. It is further noticeable that a large number of creameries were built by what is called a "promoter," or representative of some large creamery institution, who would go into a certain location and work up a creamery plant, securing sufficient subscriptions for the purpose of building—ignoring the fact that the location was unadapted for anything of the kind. In consequence of this we find in several portions of the State plants

that cost in the neighborhood of \$6000 standing idle, with no milk to keep them running. In the course of a few years the State from north to south became pretty well covered with creameries, about one-half of which are paying investments, the balance a burden upon the dairymen. And as the amount of creamery butter increased to a great extent, and the demand for this class of stock having increased likewise, the difference in price suggested to the dairymen manufacturing his product under the old method to put up a creamery of his own by purchasing a wooden stamp for about \$3, the result being that the average quality of creamery butter appearing upon the market for consumption is about 25% less than the average quality of that being manufactured.

Again, we find that in certain locations where creameries have been established it is impossible for them to manufacture a first-class article, and in many cases an article that will not grade up in quality to that of the average dairy, and which when placed upon the market does not command a price equal to that of dairy butter, and when the management of the creamery is called upon to explain the cause of this, the blame as a rule is thrown upon the agents who may be handling the product of the creamery.

Need of Education.—Now the question arises as to how these conditions may be remedied. In my opinion it is certainly through proper education. Heretofore it has been a great deal like taking a man who has been raised and educated upon a farm all his life and placing him in the management of a well-established mercantile business and expecting a good result. In other words, the height of experience, education and knowledge has been forced upon the dairymen throughout the State, who to a great extent were absolutely ignorant of the sources from which the same had been obtained. Now what is wanted is to begin to educate the dairymen in the first rudiments necessary to produce that which when brought to the creamery will enable the manager of the creamery to manufacture an article that will command satisfactory values at all times. To do this the dairymen must be educated in regard to cleanliness of his dairy house, the method of feeding his cows, the purity of the water which the cows drink, the cleanliness of the cans in which the milk is transported to the creamery, and above all to know that water when mixed with milk will not produce a larger proportion of butter fat. If they were educated in this line particularly many would not, as they now do, find fault with the test given them on their milk when received by the manager of the creamery. It is also necessary that creamerymen should be educated in the handling of the machinery and other articles connected with the creamery, for in many places the manager of the creamery is selected promiscuously from old-time butter makers who know nothing whatever regarding the delicate machinery used in the new methods.

Causes of Bad Products.—Further, in being educated as regards cleanliness, creameries are often found in a filthy condition, and it is hardly necessary to state that if all the cows in a certain district were tested with the tuberculin test and those found in an unhealthy condition killed, only the milk of the healthy cows being brought to the creamery, after being manufactured into butter the germs of disease that now exist in some of the creameries of this State would produce more sickness among the consumers than would the milk taken from the diseased cows. In several cases during my experience in handling dairy products I have found that butter when received and left to stand for twenty-four hours produced a fungus growth or mould. When investigation was made regarding the cause, in no case could the creameryman give a reason for it, but upon sending an expert to the creamery it was found the water used was either taken from a filthy well, a stagnant pool or from a tank that had not been cleaned in a number of years.

A Dairy School Demanded.—It is unnecessary to go into further details regarding dairying to state the fact that to commence on the roof to put up a building is wrong. The dairymen of this State should have been educated in the proper method of handling their product at home previous to delivery of the same to the creamery, and the creameryman or manager should be competent in the handling of anything in connection with the creamery before a creamery is built in any section of the State. And although it is barely possible that if a representative were to go among the dairymen in some parts of the State he would not secure enough signatures to warrant the establishment of a dairy school, the fact still remains that there are enough progressive dairymen in this State who would be only too anxious to have their sons educated in this special line. Further, there are a great many young men in the cities who would be perfectly willing to attend a dairy school and become conversant with all points necessary to enable them to secure a position in a creamery. But it is certain that the students will not attend a dairy school if there is no dairy school in existence, and they will not become educated if they do not know where to find a teacher. The school is certainly wanted and ought to be established.

AGRICULTURAL ENGINEER.

Roads and Roadside Tree Planting.

By A. H. SMILEY of Redlands at the University Farmers' Institute in Los Angeles.

It would be superfluous to say anything about the importance of good roads to a country, for their inestimable value is conceded everywhere. But I venture to say that better roads can be obtained in southern California at moderate expense, taking the whole year round, than in any of the States east of the Rockies and north of the Gulf States, where the breaking up of the frosted ground in the spring and the alternation of snow and rain and warm and cold weather all winter long, plays havoc with the roads; while the absence of frost here and the extreme suddenness with which the ground dries up after rain, provided the ground is properly shaped and drained, makes them very passable all the year round. In less than half a day after a long rain, where the roads are properly cared for, the horses' feet will ring upon the firm, hard ground.

The materials at command for roads almost everywhere are adobe, loam and sand. An adobe soil makes a firm, hard road in dry weather, but after a prolonged rain and much use—well, the less said about it the better. But when this adobe is mixed with sand or fine gravel from the river bottoms or washes, which are nearly always at hand, it makes a superb road. The simplest way is to spread it thickly over the road and let the wheels grind it in; and after another rain put on a second coat, and so on till the right proportion is reached and your road is firm and hard and permanent. On sandy soils a heavy coat of adobe will speedily effect a cure. But most of the soils of southern California are already of the proper consistency to make fine roads.

Narrow Roads.—And now a few words about a very important matter, viz., the proper width of roads. Many people seem to think that in laying out streets for a new town, the wider they make them the better it will be for the town plat. But I hold that if a road is made one foot wider than the actual smallest necessities of such road requires, a great mistake is made. For in the first place it detracts at once from its beauty, since a road considered merely by itself has no inherent beauty of its own, though you may admire the solid and substantial way in which it is constructed, or the smoothness of its own surface, or its freedom from unsightly weeds and rubbish. But its beauty does consist in the kinds and disposition of the trees, shrubs, vines and flowers that border it, and the houses that dot its sides, and the vistas that it opens to the landscape beyond. Then, the wider the road the greater the cost of its construction and its annual maintenance. Indeed, it is seldom that a very wide road is properly maintained. If it is say 60 to 70 feet wide from curb to curb, as many roads in southern California are, then people will use about half of the roadway for travel and let the rest grow up to weeds or be encumbered with rubbish. Then in the hot weather there is a wider glare of hot ground to blind your eyes and scald your face, and it makes a greater sweep of dust, wrapping you round and round in it, making you look and feel as if you were a part of mother earth herself.

Ah, but you say, sprinkle the road. But you must remember that the cost of running the sprinkling cart is doubled, and the property owners bordering it, or the city fathers (if it is in the city) will find it an insupportable burden, and will let the dust fly in summer and the mud fly in winter to your heart's discontent.

How Wide then Should a Road be?—It seems to me it should never exceed 30 feet from curb to curb, unless it is to be used for a horse-car or trolley line, when eight or ten feet should be added. In a great many places where the roadway is less used, passing through groves of oranges, lemons, peaches or apricots, of ten or twenty acres in extent, then a road from 18 to 25 feet wide is amply sufficient, and then whether you have sidewalks with their bordering lines of trees and shrubbery, or where the orchards themselves are allowed to come close to the roadside—in either case you are in close touch and sympathy with nature in some of her most beautiful aspects, being enwrapped and enfolded as it were in her beautiful arms.

To enable long-gear'd wagons to turn around in these narrow roads, it might be well every now and then to have a circular or oval plot in the center of the road planted with trees or shrubbery around which the road could be carried. Besides the convenience, these would make very pretty variations in a long straight road. Some of you may have passed over the roads in a park which my brother and myself own at the Redlands. These roads are mostly 18 feet wide or less, and though over a thousand visitors pass over these roads weekly in the winter season, no serious inconvenience has ever been experienced.

Shaping and Repairing.—Another important matter in the construction of roads is to have them heavily rounded, so that the water, when it rains, may flow off quickly into the gutters. It might be a good plan to let the average city surveyor fix the

grade stakes for the gutters, and then insist that they shall be lowered from 1 to 2 feet. At first such a road may seem to be too heavily crowned, but year by year it will get better and better, while your too flatly constructed road will soon have deep ruts and chuck holes in it, and if you are not very careful the main channel for the water will be in the middle of the road instead of in the gutters. To repair such a street will require a vast amount of material to be drawn from outside at an expense that will make the average taxpayer or property holder open his eyes wide in amazement.

After every winter rain—usually about one day after the rain has ceased to fall—all roads should have a scraper of some sort pass over them to fill the ruts and little depressions where water is apt to settle. This makes the road smooth and hard, and is a much more important matter than people are generally aware of. My brother and myself, in our own private roads, find that an ordinary scraper armed with steel, such as orange growers use to shape their lands, serves the purpose well, and one man with a span of horses will, in half a day, put several miles of narrow road in excellent condition.

And Now a Word About Gutters.—We all know with what astonishing rapidity deep, unsightly and sometimes dangerous gutters can be formed by the winter rains. To prevent this, the best way is at once to put in stone curbs and gutters, smooth the latter with a coating of cement to prevent the growth of weeds and to allow the water to flow off freely. In grading for such gutters, care should be taken not to have a change from a steeper to a less steep grade; otherwise after every rain you will have a lot of sand or gravel to remove below the point of junction of the two grades. Where deep cuts have already been formed on the sides of roads and the property owners cannot afford to put in cemented gutters, the next best thing is to put in solid curved stone dams, thrusting them well into the banks on either side, with a spillway for the water to flow over. The silt carried down by the water will fill up the cut to the level of the spillway. If this is too expensive, then make the dam of wood, well braced. When the fall is not too great these unsightly cuts can be checked and often entirely filled up by crowding in brush, palm leaves, etc., making sure that the water cannot get under the brush.

Sidewalks.—In the well built-up portions of a town sidewalks are, of course, a necessity, and when well constructed and well planned they add very much to the attractiveness of the road itself, but in laying out a town, these sidewalks are often planned to be extended miles away from the business center, through fruit ranches where the owners cannot afford to make and maintain them, and these portions of the road being entirely neglected, produce a thoroughly forlorn and unkempt appearance. In such cases it would be much better to let some ornamental trees or shrubbery take the place of the sidewalk; or if even this cannot be afforded, then to let the fruit trees come close to the side of the road. Whichever plan is pursued, it is a stern necessity for an attractive road that it should always be kept thoroughly clean and neat with sharply defined boundaries.

Tree Planting.—And now what trees shall we plant for shade and ornament? It seems to me that our magnificent and graceful pepper tree is easily the peer of any other, where the property owners can give it abundant room and attention, for it is a gross feeder and a hard drinker, and it must be heavily pruned in its early stages or it will break down or be blown over. A long double line of these superb trees is a grand sight, always arresting the admiring gaze of the stranger and most tenaciously holding its place in the affections of the old Californians. Its berries are strikingly beautiful when suspended from the long tapering branchlets and are scarcely less so when strewn the ground after a wind has swept them down. But it too often happens that when these trees have attained their finest proportions and beauty, the adjoining landowner, seeing that they are encroaching heavily upon his neighboring orange or other fruit trees, feels compelled to cut them down, and then desolation reigns.

Date Palms.—There is another tree, a more delicate feeder than the pepper and therefore not so objectionable to the fruit rancher, and having a still more tropical aspect. This tree, I am inclined to believe, will by-and-by be generally acknowledged to be the most beautiful and valuable of all the trees grown in southern California. I allude to that splendid palm, the Phoenix Canariensis. It is much more expensive to obtain and it is much slower in its growth than the pepper, and never affords a dense shade to a road; but it is very beautiful from the start, and every year it will become more and more so for a hundred years. Even after the lapse of ten or twelve years, nothing can excel the beauty and magnificence of a long line of these superb trees. Another Phoenix, the dactylifera, is very fine, but the foliage is inferior, though the fruit is excellent. The California palm is also very effective for street planting, either taken alone or alternating with the Phoenix Canariensis.

Acacias.—Then there are four or five acacias that

are very valuable for street planting. First there is the regular and stately acacia melanoxylon; then follow the acacia decurrens, mollissima and dealbata, with their beautiful foliage of different shades of green and their superb pendant clusters of sweet scented flowers. Then there is the acacia seligna, not so tall as the others, but when properly pruned and trained—all the acacias need much pruning, but this more than others—then it becomes one of the finest of all. Then there is the acacia floribunda, very sportive in its size and form, so that when you buy a plant from the nurseryman you cannot tell what kind of shape it will finally assume; but whatever its form, always sending out its wealth of blossoms nearly the whole year round, filling the air with its delightful fragrance.

Other Trees.—There are several species of the much despised eucalyptus that are very valuable for street planting. The sugar gum (eucalyptus corynocalyx) is one of the best. The graceful viminalis is another, and the large dark green-leaved robusta is another. With the robusta much pruning is necessary, otherwise in a high wind great branches will be broken off. The eucalypts look best in groups.

There are two fine species of the brachychiton, one of them resembling the acacia melanoxylon, only much finer, and the other with large light-green maple-shaped leaves, but this is a little tender at Redlands. Then for variety, for it is very monotonous to have many roads or streets near each other planted in the same way, there are the grevillia, the camphor tree, the magnolia grandiflora, which does best near the coast; the live oak, slow of growth but very fine, and for summer the umbrella tree, the box elder, the Lombardy poplar, the silver maple, and the elms and lindens.

Where can you dispense with the sidewalks, and the ranch owners are public-spirited enough to give the trees abundant room and care, and will not trim them at their bases, then most superb effects can be produced by planting long lines of the several varieties of the cypress, the Monterey, and especially the Guadalupe or blue and the Lawson. Then there is the Sequoia gigantea, which is fine from the start though slow of growth. And there is still another and finer tree than either of the others, and which thrives everywhere here—that magnificent product of the Himalayas, the Deodar cedar.

Diversity in the Outlook.—There is, it seems to me, one widespread error with regard to the roads that I must speak of, though I hesitate to do so because it seems so general. It is this: If a straight road running for a half mile, lined with beautiful trees, is fine—and it certainly is very fine—then if it continues on for another half mile in the same straight line and with the same trees bordering it, it must be twice as fine, and if it is pushed on for four miles in the same way, why then it is surely eight times as fine. Ah, that is a dreadful mistake, for in landscape gardening, in the decoration of streets, as well as in the directions in which they run, just as well as other fine arts, the mathematician is vanity and very much vexation of the spirit. For here we want what we find everywhere in nature—variety, infinite variety. We want changes, sometimes gradual and sometimes coming with sudden surprise; we want exquisite glimpses of near objects of beauty, or of the far off mountains or the sea, and we want files or groups of one kind of trees to succeed another to keep up our interest and gratify our tastes.

Get Good Advice.—Nearly all cities and towns of southern California have outlying districts, often consisting of rolling hills, commanding superb views of the mountains or the sea, or both together, and which they wish to prepare for suburban homes. Now before anything is permanently arranged about roads, it seems to me to be of the highest importance to consult a landscape gardener of acknowledged reputation, as also a good engineer.

Treatment for a Horse.

TO THE EDITOR:—I have a mare about ten years old, weighing about 1050 pounds, which for two or three years past has been troubled with lumps on one side of her neck. The lumps look as though a large worm were just under the skin. They are quite hard but not sore, though they reasonably have pimples scattered over them. The skin in their immediate vicinity has a mangy look. The lumps shift around slightly. She occasionally appears to be quite weak and dull and quite considerably hide-bound. This is remedied in a measure by giving condition powders, though she never looks well. She is a hearty eater, but her manure often smells very badly. Ophir, Cal. G. G.

Take her hay away some night and in the morning, before being fed or watered, give the following purgative:

| | |
|------------------------|------------|
| Barbadoes aloes..... | 6 drachms. |
| Raw linseed oil..... | 1 pint. |
| Glycerine..... | 3 ounces. |
| Oil of peppermint..... | 1/2 ounce. |

Mix and give in one dose.

Give one dose of physic, then two times weekly thereafter give a tablespoon of granular chemically-pure saltpetre. Give at night, as it opens the pores and a cold is apt to result. In getting aloes be sure to get Barbadoes only, as Cape, Soccratine, Horse or any other than Barbadoes will not act on horses. Also be certain to get raw linseed oil only, as boiled would do more harm than good. Also use sulphur iodide ointment externally. Dr. E. J. CREELY.

THE HOME CIRCLE.

Why Do We Wait?

Why do we wait till ears are deaf
Before we speak our kindly word,
And only utter loving praise
When not a whisper can be heard?

Why do we wait till hands are laid
Close-folded, pulseless, ere we place
Within them roses sweet and rare,
And lilies in their flawless grace?

Why do we wait till eyes are sealed
To light and love in death's deep trance—
Dear, wistful eyes—before we bend
Above them with impassioned glance?

Why do we wait till hearts are still
To tell them all the love in ours,
And give them such late meed of praise,
And lay above them fragrant flowers?

How oft we, careless, wait till life's
Sweet opportunities are past,
And break our "alabaster box
Of ointment" at the very last!

Oh! let us heed the living friend
Who walks with us life's common ways,
Watching our eyes for look of love,
And hungering for a word of praise!

—Unknown.

Granny's "Yarbs."

She dosed the boy with calomel,
Then gave him catnip tea;
And yet he didn't feel quite well.
He had the grip, you see

She gave him tansy, boneset, squills,
Rubbed tallow on his chest
And fed him lots of blue mass pills,
Which quickly did the rest.

By this time John could not get up;
And as he lay in bed
She drenched him from a quassia cup
Till he was nearly dead.

And when at last the doctor came,
And fetched poor Johnny round,
Folks said, "'Twas granny, all the same,
Kept him above the ground."

—J. L. Heaton in "Quilting Bee."

Learning a Lesson.

"I can get along with him, I'm very sure," said Joscilind Darkridge.
"Nobody could get along with him!" chorused the three other Miss Darkridges, in unison.

Uncle Black was the personage of whom they spoke—a crabbed ill-tempered little old man—who lived in a superb old country seat among the Catskills.

He had money to leave, but his nieces and nephews secretly believed that it would be a deal easier to go to California or Golconda, or some of the fabulous places and dig fortunes out, nugget by nugget, than to stay at home and earn them by making themselves acceptable to an old gentleman who had as many angles as a rose diamond, and as many prickly spikes of temper as a porcupine.

Naomi Darkridge had tried it first. Naomi was a soft-voiced, slender girl, with a head which reminded one of a drooping lily.

"No one can help loving Naomi," said Mrs. Darkridge, as she kissed her daughter good-bye.

But in three weeks Naomi came back half frightened out of her wits.

"He scolds so dreadfully," said Naomi. "And he looked at me as the wolf must have looked at Little Red Riding Hood. Oh, mamma, I couldn't stay there, not if I was to be made richer than Mrs. Burdett-Coutts herself."

Magdalena Darkridge went next; but Magdalena, although a fine, tall girl, with a spirit of her own, was cowed by Uncle Black's savage eyes in less than a week.

"I'd sooner sweep crossings for a living," said she, "than be Uncle Black's heiress."

And so she came home without loss of time.

Rhoda Darkridge, in no wise abashed by the successive failures of her sisters, was the third one to try Black Grange and its possibilities. But she also succumbed before the terrible scourge of Uncle Black's savage tongue.

"It's scold, snarl, snarl, scold, from morning till night!" said Rhoda, as in three days' time she tearfully related her experience to her parents. "Oh, you don't know—nobody can know—

what a dreadful man Uncle Black is!"
"Oh, hang the old scamp!" said Mr. Darkridge, who was of a free-and-easy nature, and thought his girls a great deal too sweet and nice to be snarled at by any rich old miser. "Let him alone. My daughters needn't go begging for any man's money!"

But here Joscilind, the youngest, tallest and prettiest of the four girls, spoke up:

"I'll go!" said she.

"You don't know what you are undertaking," said Naomi, with a shudder.

"He'd wear out a stone," said Magdalena.

"He's a ghoul!" shuddered Rhoda.

"I can get along with him, I am very sure," said Joscilind, brightly.

And she packed up her little trunk and went to Black Grange.

It was sunset—a red, flaming sunset like one of Gifford's pictures—when she came up the terraced flight of steps that led to the house. Everything glowed blood-red in the deep light, and Joscilind could see how lovely was the scenery, how substantial this old gray house, with its square towers and semi-circular, colonnaded porch. Uncle Black stood on the steps.

"So you are Joscilind?" said he, surveying her with little twinkling eyes, like glass beads.

"Yes, I am Joscilind," said the bright-cheeked girl, giving him a kiss. "You're late!" said Uncle Black.

"I am late," said Joscilind. "I thought the old beast of a stage never would have got here. The horses fairly crept and the roads were horrid."

"It's a dreadful warm day," growled Uncle Black.

"I'm almost roasted," signed Joscilind.

"The whole summer has been intolerably warm," said the old gentleman.

"We might as well be in the tropics and be done with it," retorted Joscilind, flinging off her shawl and fanning herself vehemently.

Uncle Black gave her the keys that night, just as he had three times before given them to her three sisters.

"I shall expect you to take charge of the whole establishment," said he. "The servants are miserable—"

"No more than one might expect," interrupted Joscilind, with a deprecatory motion of the hand. "Servants are mere frauds nowadays!"

"And nothing goes right about the place."

"Nothing ever does!" said Joscilind.

Uncle Black eyed her queerly. This was quite different from the determined cheerfulness and systematic good spirits of her sisters.

At breakfast next morning Uncle Black began to scold as usual.

"Fish again!" said he. "This makes four mornings this week we've had fish."

"I detest fish!" said Joscilind, pushing away her plate with a grimace.

"And the rolls heavy again!" growled Uncle Black, breaking one open.

"Please give me the plate, Uncle Black, said Joscilind, and she rang the table bell sharply.

Betty, the cook, a stout, good-humored Irish woman, made her appearance.

"Betty," said Miss Darkridge, "be so good as to throw these rolls out of the window."

Betty stared.

"Do you hear what I tell you?" said Miss Darkridge, with emphasis.

And Betty flung the rolls out among the rose bushes, where they were speedily devoured by Cato, the New Foundland dog, and Rob and Roy, the two setters.

"But what am I to eat for breakfast?" bewailed Uncle Black.

"Crackers, of course," said Joscilind. "Anything is better than imperilling one's digestion with such stuff as this! And, Betty, if you send up any more fish in a month you may consider yourself discharged—do you hear?"

"But, my dear, I am rather fond of fish," put in the old gentleman.

"One can't eat fish the whole time," said Joscilind, imperiously. "Here, Betty—this coffee isn't fit to drink; and the toast is burned; and you must have put the cooking butter on the table by mistake. Let these errors be rectified at once!"

Betty retired with an ominous rustle of her stiffly starched apron.

"My dear," said Uncle Black, apprehensively, "Betty is a very old servant, and—"

"I don't care if she is the age of Methuselah," said Joscilind; "nobody can be expected to put up with such wretched cooking as this!"

"I really think she is not so bad, if—"

"Oh, pray don't apologize for her, Uncle Black!" said Joscilind. "They are all shiftless, lazy creatures, who must be discharged promptly if they don't do their duties."

Uncle Black began to look frightened. He had kept Betty, Sylvia and old John for ten years. Was it possible that he had scolded at them for ten years, only to have Joscilind Darkridge outscold him now?

"I wouldn't be too short with 'em, my dear, if I were you," he remonstrated.

"Then let them do their duty," said Joscilind, with the air of an empress.

"We are all mortal," pleaded Uncle Black.

"I expect every one around me to live up to their conditions," said Joscilind.

Uncle Black ate the rest of his breakfast with but little appetite. Sylvia, the housemaid, was finishing dusting his library when he entered.

"Not through yet!" growled Uncle Black, the fretwork of wrinkles once more coming into his brow.

"Sylvia," said Miss Darkridge severely, "if this happens again I shall dispense with your services! Look at that clock! Is this the time of day to be dawdling about the rooms with a broom and duster? Remember, Mr. Black does not pay exorbitant wages to lie in bed until noon!"

"My dear," said Uncle Black, "Sylvia is generally a very good girl, if—"

"Dear uncle," interrupted Joscilind, "pray permit me to be the judge of these matters. You have ruled your household with a slack and indulgent hand altogether too long. I shall now institute a reform."

And poor Sylvia had never moved about so briskly as she did that day.

Old John, the gardener, was not exempt from his share of the general turmoil. Miss Darkridge chanced to hear her uncle reproaching the old man for some fancied neglect in the flower beds, whose diamonds, ovals and crescents of brilliant colors were the pride of his horticultural heart, and she promptly came to his aid.

"Gardening indeed! Do you call this gardening?" she said. "Uncle Black, I'm astonished that you keep such a man as that about the place!"

And the torrent of taunts and reproaches which she showered upon the luckless head of poor old John was enough, as that individual observed, "to make one's flesh creep."

"My niece is a young lady of spirit and energy," apologized Mr. Black, when at last Joscilind had gone back to the house.

"Verra like you, sir, verro like you!" said old John, scratching his head.

"Like me!" said Mr. Black, slowly.

And he stood full five minutes, quite speechless and motionless, staring at the mossy rim of an ancient sun-dial half sunk in the velvet grass. And at the end of five minutes he spoke two other words, and only two:

"Like—me!"

"There's no knowin' the master, he's that changed," said Betty in the kitchen, a week or two later. "He's as mild as a lamb and as peaceable as a kitten."

"Sure, isn't that what the young lady told us," said Sylvia, "when she came down into the kitchen that first morning after the fire was lighted, and told us she was goin' to try an experiment; we wasn't to mind a word she said, 'cause it was all by contraries? 'He don't know what his temper has got to be,' said she, 'and I'm going to show him.' And, bless her sweet heart, her plan has worked like a charm."

It had, in good truth. Uncle Black was a changed man. And Joscilind had relapsed into the original sunshine of her temper—and all the domestic wheels of Black Grange seemed to revolve on velvet.

But Uncle Black took all the credit to himself. He never knew that Joscilind had taught him a lesson.

"We can get along very nicely," said he, "now that my niece has subdued those little tempers of her."

And Joscilind was his heiress and darling after all—for he will always believe that it was he "who formed her character."

Gems of Thought.

Man's rank is his power to uplift.—George McDonald.

Love of reading enables a man to exchange the weary hours which come to everyone for hours of delight.

Too many people are singing, "Scatter Sunshine," and waiting for somebody else to do it.

The man who figures on marrying an heiress often finds he isn't well up in mathematics.

People seldom love those who withstand their prejudices, and who endeavor to control their passions.

Words are not arrows, but they fly farther.

Thou shalt be served thyself by every sense Of service which thou renderest.

—E. B. Browning.

To-morrow has trouble to lend,
An endless, endless store;
But I have as much as heart can hold—
Why should I borrow more?

—Harriet M. Kimball.

Be of good cheer, there is some heart
Ready to bear with us a part
Of burdens which are on us cast,
Some one to love us to the last;
Some one to smooth life's rugged way!
Some smile to cheer us day by day;
Some angel, with a radiant brow,
Is walking with us, even now!

—Henry S. Washburn.

To love God and man proves to be not enough: there are other creatures to be taken account of. As it now appears, goodness and gentleness cannot stop at the line that separates human from other life. The heart that has attained to the highest sympathy will manifest its quality toward other creatures it has to do with.—Newton M. Mann.

He fails who climbs to power and place
Up the pathway of disgrace.
He fails not who makes truth his cause;
Nor bends to win the crowd's applause;
He fails not who stakes his all
Upon the right, and dares to fail.
What though the living bless or blame?
For him the long success of fame.

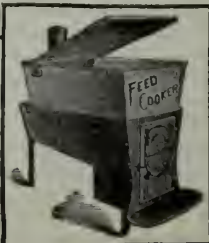
—Richard Watson Gilder.

The course of life is a thousand trifles, then some crisis; nothing but green leaves under common sun and shadow, and then a storm or a rare June day. And far more than the storm or the perfect day the common sun and the common shadow do to make the autumn rich. It is the "every days" that count. That must be made to tell, or the years have failed.—William C. Ganett.

More Than He Expected.

Granite State Evaporator Co.
Gentlemen:—I am well pleased with the Cooker I purchased of you last fall, and find it to be more than I expected for the money. It takes less fuel than any other I have ever seen. I think if more farmers in this part of the country cooked their hog feed, we would have less of what is called Hog Cholera when we commence to feed green corn in the Fall.

Yours truly,
S. W. SPENCER.
25 gallon, \$12; 50 gallon, \$17; 100 gallon, \$24.
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Popular Science.

The loftiest active volcano is Coto-paxi. It is 18,880 feet high, and its last great eruption was in 1855.

The sea round any desert island rarely visited by man, and distant from any mainland, always teems with fish.

In Arabia excavation by the wind forms pits over two hundred feet deep, down to the hard stratum on which the sand lies.

An English medical paper queerly remarks (of one of many like fungi) that the most wonderful vegetable in the world is the truffle, because it has neither roots, stem, flowers, leaves nor seeds.

The high temperature of the sun is not maintained by combustion; of this astronomers are sure. If the temperature was maintained in this way the sun would have burnt out long ago. Shrinkage in size is the now accepted theory of the source of the sun's heat and light.

In a recent address on the achievements of hygiene, Prof. Kober of the Georgetown University quoted the following facts to illustrate what the introduction of germicides and antiseptic methods has accomplished: During the Crimean war, many more than half the amputations that were performed resulted in the death of the patient, the exact percentage of mortality being 63.2. During the American civil war, the mortality from amputation was still 48.7 per cent. Then the new methods came to be more and more employed, and in 1890 the statistics of amputation showed that the mortality was but 6.9 per cent.

It has been remarked that the negroes in sugar-cane regions depend to a considerable extent upon the juice of the cane for nourishment. By the use of Mosso's ergograph, Dr. Harley found that sugar promoted muscular power wonderfully. On a fasting day ti increased his ability to work sixty-one to seventy-six per cent. Taking ordinary meals, he found that eight and three-fourths ounces per day increased his work capacity twenty-two to thirty-six per cent. In these days, when athletes are so much inclined to use special stimulants for immediate preparation for their contests, it might be interesting to try sugar as a substitute for the possibly injurious preparations sometimes in vogue.

Curious Facts.

The eight great water companies of London now supply nearly six million people with about 186,000,000 gallons of water a day.

The longest continued cataleptic sleep known was reported from Germany in 1892. It continued four and one-half months.

Sufferers from neuralgia are warned by a medical writer not to drink tea, but coffee in which the juice of a lemon has been squeezed.

Nearly all lions are "left handed." Livingston noted that when one desired to strike a forcible blow the animal almost always used the left paw.

The region about the Dead Sea is one of the hottest places on the globe, and the sea is said to lose one million tons of water a day by evaporation.

One of the latest things in surgery is the practice of embalming an injured limb as a substitute for amputation. It is claimed by Dr. Reclus of Paris that much more tissue is thereby saved.

Temper lamp chimneys by putting them in a pan of cold water on the range and bringing the water to boil, letting the glasses cool in the water after being removed from the heat. If the brass catches are not too tight, breakages will be few.

A horticultural wonder in the shape of an apple tree bearing four crops has developed on the Marshall county farm of Asher Boyce, near Laposte, Ind. The first crop ripened and fell off weeks ago. This week Mr. Boyce picked the second crop, and the third crop, the apples being the size of wal-

nuts, is now ripening. The top of the tree is a mass of bloom, heralding the fourth crop.

Fashion Notes.

Sleeves to ball dresses and other evening toilettes are suspected rather than seen.

Tulles and gauzes woven with filagree gold, silver or steel are used for making toques. Plain tulle and gauze will be used for trimming all sorts of spring and summer hats, and closely spangled tulle will be used more for the puffed borderings of straw toques.

Some new and beautiful evening silks have tiny turquoise, pale green and light rose-colored stripes on a white ground, with baby rosebuds scattered carelessly about.

Veiling tulle in the best taste are in black and white. The most fashionable mesh is as tiny as possible. A double veil of Mechlin tulle, in pure white, is shown in Paris. Over the white tulle an almost invisible mesh of black is worn, showing small dots of chenille.

Plush is making a vigorous bid for favor again, and used in combination with Venetian point lace, embroidered with gold and silver thread, it makes a very rich dress trimming.

White broadtail is used for vests in cloth gowns.

Organdie-sublime is a lovely fabric for summer wear. The color tones are exceedingly soft and beautiful, and the designs are quaint and bizarre, and thoroughly artistic.

Lace collars and yokes, both black and white, will again be worn, and this particular time of year, just before stock taking, they can be bought at most reasonable prices. They are a good investment for summer gowns, and will besides help to freshen up some pet gown that has done duty all winter.

Blue is to be the leading color in the spring. Sky and navy blue, porcelain, flax, grayish and lavender blues are all represented, both in millinery and dress goods. Lavender blue made its appearance this winter, and a few elegant toilettes of this shade were worn by exclusive women. For flowers and other millinery trimmings turquoise blue will be given special prominence.

DOMESTIC ECONOMY.

Domestic Hints.

FIG PUDDING.—One pound of figs, chopped fine, one quart of grated bread, one cupful of powdered sugar, one-half cupful of butter, four beaten eggs and two cupfuls of sweet milk; stir all together, place in a pudding dish and steam for one and one-half hours. Serve with sauce.

FRIED TRIPE, SPANISH STYLE.—Roll slices of boiled or pickled tripe in flour, and fry in hot lard. Take it up and put in the pan one chopped onion. When this is brown add the juice of a can of tomatoes, salt, pepper and a tablespoonful of pepper sauce. Let boil up well, pour over the tripe, and serve hot.

OYSTERS WITH MUSHROOMS.—One quart of oysters plumped; skim these out. After draining the mushrooms, if the two liquids do not make a pint, add cream. Thicken this liquid or sauce with a tablespoonful of flour dissolved in a little cold water. Let it boil three minutes. Previously chopping the mushrooms very fine, add; now cook two or three minutes. Seasoning: one teaspoonful of lemon juice, half teaspoonful of salt, white pepper. Stir in a tablespoonful of butter and the yolks of two eggs, well beaten. Then add the oysters and "just come to a boil."

IRISH STEW.—Blanch three pounds of mutton chops by dipping alternately in hot and cold water, put in a stewpan and barely cover with water; let come to a boil; skim carefully; season with salt, parsley, mace and a few whole pepper corns; boil half an hour, then

add a quart of small onions, boil half an hour longer, and add a quart of small potatoes; boil until done; lay the chops around the edge of a platter, skim out the potatoes and onions, and put in the middle; thicken the gravy with a very little flour and pour over the vegetables. Sprinkle over the whole two or three tablespoonfuls of finely chopped parsley.

BOSTON CREAM CANDY.—To one pound of granulated sugar allow one tablespoonful of vinegar, one teaspoonful of flavoring, one-half a teaspoonful of cream of tartar and one cupful of water. Boil the sugar, vinegar, water and cream of tartar together, until it snaps when tested in cold water; add the flavoring, pour out on a greased platter and when cool enough to handle, pull until white.

Hints to Housekeepers.

A damp cloth dipped in common soda will brighten tinware. Rub briskly and dash hot water over it.

The water in which the fresh tongue, mutton or chicken is boiled may be used for soup or added to the stock pot.

A jar filler should long to every housekeeper who puts up preserves. Only the best granulated sugar should be used. Do not use cans made from tin, but large-mouthed glass jars.

One of the simplest and most efficient means of driving away rats is to set a saucer of chloride of lime around the places which they frequent. They do not eat the lime, but its fumes are very disagreeable to them and will result in their leaving the neighborhood.

Time usually required for cooking vegetables: string beans, beets and cabbage, two hours; pease and onions, one hour; turnips, three-fourths of an hour; potatoes, squash and stewed tomatoes, one-half hour; green sweet corn on the ear, eight minutes; when cut off, five minutes.

A good disinfectant that costs very little and is perfectly odorless is made by dissolving a heaped teaspoonful of nitrate of lead in a quart of boiling water, stirring it with a stick; and then adding it to a pailful of cold water. This will not stain. It is useful for the kitchen, sink and the bathroom.

Strange as it may seem, baked potatoes are still occasionally seen on the table in a covered dish. Served this way, they become soggy almost at once. After pricking them with a fork, as they are being taken from the oven, they should be laid on a folded napkin on a platter, the napkin folded so that one corner will cover the potatoes, in order to preserve their heat without condensing the steam from them.

Grilled almonds are an agreeable sweet to serve at a luncheon as a change from the customary salted almonds. To prepare them, a cup of blanched and dried almonds is made ready. To one cup of sugar add one-half cup of water, and boil for about ten minutes; then drop in the almonds and continue the boiling till the nuts turn a faint yellow; next remove quickly from the fire, and stir until the syrup reaches the sugary stage, clinging to the nuts. They are then spread to cool on a plate over which a piece of waxed paper has been laid. Serve like salted almonds.

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DR. S. A. TUTTLE, 27 Beverly St., Boston.

Coast Industrial Notes.

—During '97 about 26,000,000 gallons of wine were produced in California, at an average price of 9 cents per gallon.

—The graders of the Valley Road are at Bakersfield, Cal. The road will begin to operate there by March 1st.

—California expects to produce 160,000 tons of beet sugar this season. One-half of this will be consumed in the State, leaving 75,000 tons, or 6250 carloads, to be shipped East.

—L. Terrazas and associates have been granted a concession for the establishment of one or more packing houses in the republic of Mexico. They must invest \$1,000,000 in the plant, and have deposited \$10,000 as a guarantee.

—The Sonora, Cal., Democrat says that the Stockton and Tuolumne Railroad will positively be built, that it knows one person who has put up \$100,000 in cash, taking therefor stock in the Stockton and Tuolumne Railroad, and stands ready to put up a like amount at a few days' notice.

—Orange shipments from southern California are now under full headway. During the season they range from 40 to 120 carloads daily over the Southern Pacific, and at present the line is carrying toward the East ninety carloads every twenty-four hours. Three hundred boxes go to the car, containing each on the average 200 oranges. This would make the present shipments of that fruit over that line 5,400,000 daily.

—The Port Susan Logging Co. has just completed a contract for what is reported to be the largest cargo of spar timbers ever put out of Puget Sound. The cargo consists of 640 spars, running from 50 to 116 feet in length, and varying from 72 inches in diameter at the base to an 18-inch diameter at the top. The spars go to Boston. The logs are squared at the butt end and for one-half of the whole length, making the square of the butt equal to the diameter of the log at the one-half mark.

—A contract for the construction of the railroad tunnel, near Point Richmond, Cal., was awarded this week by the Board of Directors of the San Joaquin Valley Railroad to Foley Bros. & Muir of St. Paul, Minn., conditionally. The reason for the proviso was that no representative of the successful bidders was present to enter into a definite agreement, one of the terms of which is the filing of a bond in \$100,000 for the proper execution of the work. The amount of the contract is stated by the railway officials to approximate \$350,000. The construction of this tunnel is in effect the starting point of the direct connection of the Valley Railway with San Francisco. It is to permit the passage of trains from Stockton to Point Richmond, on San Francisco bay, through a range of high hills lying between the tule lands and the promontory. The tunnel proper will be 5700 feet in length.

—In the State of Jalisco, Mexico, the falls of Juanacatlan, located fifteen miles from the city of Guadalajara, which is now supplied with electric lights from this fall, a great source of power exists. Juanacatlan has been called "the Niagara of Mexico." There the River Lerma, which drains Lake Chapala, with a width of over 200 feet, makes a leap of 60 feet. The cotton mills of Tlalpan, a suburb of the City of Mexico, are now being moved to these falls. In the northeastern part of the State of Puebla a whole river make a leap of 997 feet. Near the station of Rascon, on the Tampico branch of the Mexican Central railroad, is the Abra de Caballos, where another river falls in a series of cascades some 300 feet, and in various parts of Mexico, from the State of Chiapas, in the south, to the northern States, there are similar falls, where valuable powers exist. The conformation of Mexico is favorable for the creation of water powers, as the largest part of the country is an elevated tableland, which acts as a large roof, and on all the slopes where the water falls down to the lowlands there are valuable water powers.

—Regarding the Nicaragua canal, the Maritime Canal Company, anticipating a favorable report from the Walker commission as to the feasibility of the project and of subsequent favorable action by Congress, has men on the ground prepared to begin the work of construction. Under terms of its concession from the Nicaraguan government, the canal was to have been completed next fall, otherwise the concession would be forfeited unless the company had expended a large sum of money. In fact, it is the contention of the Nicaraguan government that the concession has already been forfeited, but this contention is not accepted by either the company or the administration. The preliminary report which the commission will make will be submitted to Congress with a view to getting favorable action upon the bill. It has been anticipated that the report would be favorable, both as regards the feasibility and cost of the canal. The estimate made by Civil Engineer A. G. Menocal for the company in 1895 for the construction of a canal following the Tola basin line puts the cost of work at \$66,466,880, and a second estimate, the canal to follow a low level line, fixed the cost at \$68,893,660. The Ludlow commission estimated that a canal built along the low level line would cost \$133,472,893. If the Walker commission estimated that the cost will be three-fourths of Mr. Menocal's original estimate \$66,466,880, then it fixes the figures at \$49,855,160.

An Emaciated Boy.

HIS LIMBS NO LARGER THAN A PERSON'S WRISTS.

The Peculiar Condition of J. F. Williams' Four-Year-Old Boy—The Case Attracting Wide Attention—Many Parents and Physicians Interested.

From the Democrat-Message, Mt. Sterling, Ill.

Residents of Damon, the village fourteen miles northwest of Mt. Sterling, Ill., have recently told a remarkable story of the almost miraculous recovery of little Josie Williams, the four-year-old son of John F. Williams, who resides a short distance northwest of Damon.

The Democrat-Message dispatched a representative to the scene to obtain the actual facts in connection with the case, and stakes its reputation as a newspaper upon the truth of the incidents herein cited.

Mrs. Williams is a pleasant-voiced matron. She has the forceful personality, the positive manner that is matured and developed by the cares and responsibilities of a farmer's wife. She would make a good witness for any cause founded upon the principles of truth and equity, and she told the story of little Josie's sickness and recovery in a convincing way.

"He was never right from the time of his birth," she said. "He was weak and puny, and did not grow like other children. A year ago last February, when he was two years old, he had an attack of lung fever. We had the services of Dr. Jones for two or three weeks. After Josie had recovered from the fever, he did not seem to get any strength. He had no appetite and could not keep anything on his stomach. He would fall, trying to walk across the room, and after a while he could not bear his weight. His legs seemed to wither away until there were nothing but skin and bones, and he kept up a continual coughing.

"We had a boarder named Asa Robinson who had rheumatism so severe that he was bent nearly double. He had used Dr. Williams' Pink Pills for Pale People, and had become so well and strong that he was able to chop wood every day and never feel a touch of his rheumatism. He said that he believed the pills would help little Josie. At that time I also read an article in the Quincy Whig regarding some people who had been cured by Dr. Williams' Pink Pills for Pale People, and I said to my husband that we should get some for Josie as they cost only 50 cents a box or six boxes for \$2.50, and could be bought at any druggist's. He decided to try them, and went to Mt. Sterling to Dr. Irving and bought three boxes. We began the last of March giving him one-third of a pill three times a day. In three days we noticed an improvement, and we increased the dose giving him half a pill at a time. He kept improving and finally we gave him one pill at a dose. Near the first of June we gave him the last of the three boxes which we had bought in March, and now little Josie is as fat and hearty as any boy in the neighborhood. He has a good appetite and never has any trouble with his stomach. I never had any faith in proprietary medicines before, but Dr. Williams' Pink Pills for Pale People saved our Josie from the grave, and I do not believe anything else would."

(Signed) MRS. JOHN F. WILLIAMS.
Subscribed and sworn to before me this 21st day of June, 1897.

(SEAL) DAVID CRISP, Notary Public.
Dr. A. A. McCabe is the coroner of Brown County and is a physician of extensive practice. He accompanied the Democrat-Message representative and made a thorough examination of little Josie with reference to his physical condition. His statement under oath is appended.

STATE OF ILLINOIS, } ss.
BROWN COUNTY, }

"I, A. A. McCabe, a regularly licensed physician of Mt. Sterling, Brown County, Illinois, hereby state that I made thorough examination of Josie Williams, the four-year-old son of John F. Williams, of Damon, Brown County, Illinois, on Monday, June 7, 1897. With the exception of indications of nasal catarrh, I found him in a thoroughly healthful condition physically. I was unable to find in his present condition any evidences of the disease with which his parents affirm he was afflicted."

A. A. MCCABE.
Subscribed and sworn to before me this 28th day of June, A. D., 1897.

(SEAL) MORT. BROOKS, Justice of the Peace.
This is to certify that I treated a little boy of John F. Williams, of Damon, Illinois, suffering from catarrhal pneumonia from March 12 to March 27, 1896. During the above period the child was greatly prostrated and in a very serious condition, and for a number of days its life was despaired of but finally took a change for the better and complete recovery ensued.

N. A. JONES, M. D.
Subscribed and sworn to before me this 17th day of June, 1897.

(SEAL) GEO. RUPP, Notary Public.

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Don't fail to plant a few of them this spring.
The best and most profitable of all berries.
I offer nice plants at 10 cents each, postpaid;
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WICKSON, RED JUNE, and Other Choice
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ROSES
Red, White, Pink, Yellow and
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FOR 10 CENTS



ALL WILL BLOOM THIS SUMMER.
Send 10 cents for the above Five colors of Roses. I
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crimson in large clusters. Mrs. Pierpont Morgan,
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Clothilde Mosport, the great garden or pot rose. Fran-
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Natural Gas Wells in the United States.

The wells usually are started with an 8-inch hole, which is fitted with wrought iron pipe, through the drift to the bedrock. Through the succeeding strata a 5½-inch hole is drilled and fitted with a wrought iron casing down to the solid, impervious stratum located just above the gas-bearing rock, through which the drill is run without any casing into the gas rock. Upon the developments at this point depend the next steps. A mixture of oil and salt water may be encountered with the gas, and many ingenious experiments are adopted to separate them.

The gas is brought to the surface through 2½ or 3-inch wrought iron pipe, at the bottom of which is placed an arrangement of so-called "packers" to make a gas and water-tight joint between the pipe and the solid, impervious rock wall of the drill hole, and if water and oil are found in the gas rock, to keep them from flowing up from the lower end of the pipe. The general style of the many types of packers is the same. A hollow cylinder of rubber, smooth or ribbed on the outside, and as large as can be put in the well, is held above and below by a ship joint. When the tubing rests on the bottom of the well, the weight of its upper part forces the top flange upon the rubber, distending it against the sides of the well, and thus making a gas and water-tight joint.

At the surface end of the tubing three valves are placed and arranged so that the well may be blown out into the air, or shut off from the service main, which is also blown out from time to time. Before confining the gas by closing these valves, the tubing is anchored down by clamps and ties to the top of the 8 inch casing. In spite of every precaution, attempts to control the gas are often followed, where great pressures are encountered, by the lifting of the tubing casing and all from the ground. Instances are recorded of wells remaining uncontrolled for over a year.

The depth of the wells varies greatly in the different fields, the widest variations being in the Ohio and Pennsylvania districts, while in Indiana it is more uniform. The best wells in Indiana are about 1000 feet deep, and, as a rule, tap the Trenton limestone less than 100 feet either way from sea level. In Pennsylvania and Ohio wells are much deeper below sea level. A geological section of Indiana rocks along a line from Delta, Ohio, to Terre Haute, Ind., passes through the most productive region.—Hosea Webster, in Cassier's Magazine for February.

Origin of Amber.

The main source of the amber supply is the sea coast of the Baltic sea. It is fossil gum, originally the exudation of a species of conifer now extinct. This grew in luxuriant profusion hundreds of thousands of years ago on the marshy coasts of northern Europe, when the climate was much warmer than it is to-day. The natural history of amber is thus explained: The immense forests of amber pine underwent their natural downfall and decay. The resin of the wood accumulated in large quantities in bogs and ponds and in the soil of the forest. Where the coast was slowly sinking, the sea by and by covered the land; and the amber, which had been gradually hardening, was at last deposited at the ocean bottom. But in higher regions the pines

continued to flourish, and so amber would still continue to be washed down to the shore and deposited in the later-formed green sand and the still later formed stratum of lignite or brown coal. The gum became fossilized by its long burial underground.

More than 200 specimens of extinct life, animal and vegetable, have been found imbedded in amber specimens, including insects, reptiles, plants, leaves, shells, fruit, etc., which had been caught in the liquid gum and entombed there for all time. Some of these specimens are so curiously beautiful as to be almost priceless, and one English collector has a cabinet of them which is valued at £100,000. One piece embalms a lizard about eight inches long, a little jewelled monster perfect in its form and coloring, which has no like in anything existing now. Indeed, in many instances, science is able solely through this medium to study details of animal life which perished from the earth many hundred thousands of years ago. There are flies preserved with wings poised as if for flight, where the prismatic sheen glowing through the yellow sepulchre is as brilliant as if they were floating alive in the sunshine.

A lamp does not burn very well, and eats its head off in chimneys, unless you use the chimney made for it.

Index tells.

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And Reliable.

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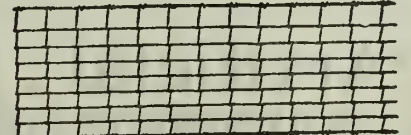
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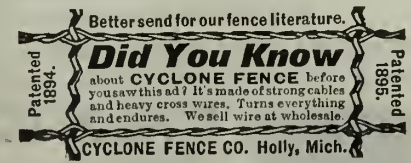
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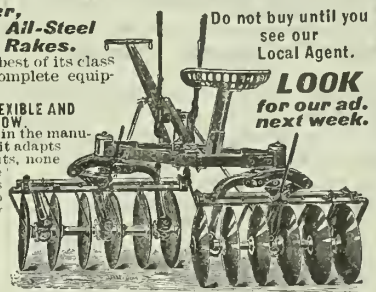
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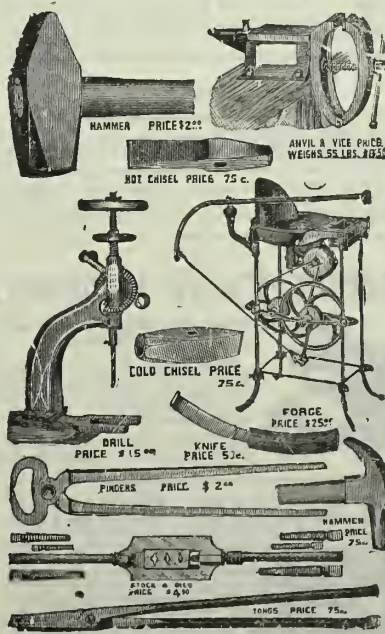
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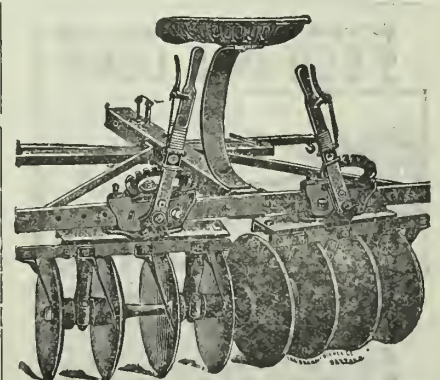


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Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1888.

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List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING JANUARY 25, 1898.
 597,980.—MINER'S LANTERN—Harriet J. Delzele, Jackson, Cal.
 597,994.—TRANSPORTING AND WEIGHING CANE—A. S. Hallidie, S. F.
 598,067.—CAR FENDER—W. B. Heywood, Gualala, Cal.
 598,068.—CAR FENDER—W. B. & W. H. Heywood, Gualala, Cal.
 597,991.—SWING—G. M. Lease, Salem, Or.
 597,734.—HAY LOADING NET—C. McConnell, McDermitt, Nev.
 598,004.—PITMAN FOR MOWERS—J. S. Ord, Aptos, Cal.
 597,832.—WAVE POWER—J. M. Palmer, Fort Grant, A. T.
 597,833.—WAVE POWER—J. M. Palmer, Fort Grant, A. T.
 597,788.—PHOTO CARRIER—M. V. Shaff, Los Angeles, Cal.
 598,025.—GAS ENGINE—S. S. Simrak, S. F.
 597,920.—REFINING OILS—E. A. Starke, San Rafael, Cal.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

DEVICE FOR TRANSPORTING AND WEIGHING CANE.—A. S. Hallidie, San Francisco, Cal. No. 597,904. Dated January 25, 1898. This invention relates to a method of transportation by means of elevated wire ropes elevated above the ground, moving on sheaves or pulleys, and usually called ropeways, and automatically depositing and weighing the discharged product. This invention is especially designed for the rapid and economical transportation of sugar cane and other products grown from fields where they are gathered to a distant point where it may be desired to collect them. This is accomplished by means of an endless traveling rope suspended above and across the field occupied by the growing crop, a carrier suspended to clips or saddles upon said rope, one or more hangers depending from the clips, each having an eye at the upper end to connect it with the clip, and a pawl and socket connection at the lower end for the suspension of the carrier. The carrier has jointed arms connecting to the hangers, a counterbalance lever, a latch or keeper to hold the cradle sections in position and diagonal braces to prevent longitudinal swinging of the hangers. At the point of deposit is a tripping piece which acts to automatically disengage the latches and allow the cradles to tilt and discharge their contents upon the weighing platform. This weighing platform carries upon it a receiving surface having an upwardly projecting guard upon one edge, this surface or platform normally standing in a horizontal position, so that the contents of the carrier are discharged upon the platform, where it remains long enough to be weighed, after which the platform is tilted to deliver its contents to a chute or other means for conveying it to the feeding belt of the sugar mill or to any point where it is to be deposited.

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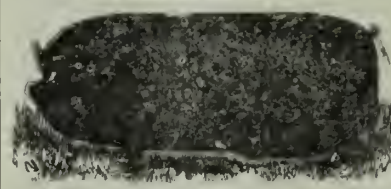
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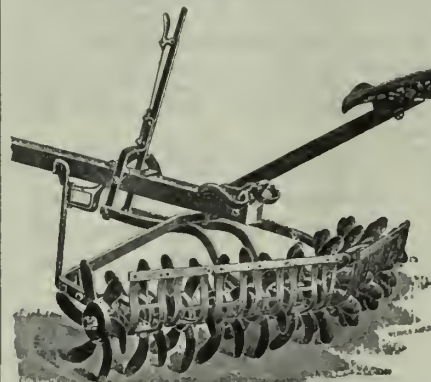
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S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, February 9, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|-----------------|-----------------|
| Wednesday..... | 96 1/2 @ 95 1/4 | 85 1/2 @ 85 1/4 |
| Thursday..... | 95 1/2 @ 94 1/4 | 85 @ 84 |
| Friday..... | 94 1/4 @ 93 1/4 | 83 1/2 @ 83 1/4 |
| Saturday..... | 95 1/4 @ 95 | 84 1/4 @ 83 1/2 |
| Monday..... | 94 1/4 @ 95 1/2 | 84 1/4 @ 83 1/2 |
| Tuesday..... | 94 1/4 @ 96 1/4 | 83 1/2 @ 85 1/2 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|------------|------------|
| Wednesday..... | 7s 4 1/2 d | 7s 1 1/2 d |
| Thursday..... | 7s 4 d | 7s 1 d |
| Friday..... | 7s 4 1/2 d | 7s 1 1/2 d |
| Saturday..... | 7s 4 1/2 d | 7s 1 d |
| Monday..... | 7s 3 1/2 d | 7s 0 3/4 d |
| Tuesday..... | 7s 3 1/2 d | 7s 0 3/4 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|-----------------------|-----------------------|
| Thursday..... | \$1 39 3/4 @ 1 40 1/4 | \$1 33 1/4 @ 1 34 1/4 |
| Friday..... | 1 40 @ 1 40 1/4 | 1 34 1/4 @ 1 35 1/4 |
| Saturday..... | 1 39 1/4 @ 1 40 | 1 32 1/4 @ 1 33 |
| Monday..... | 1 37 1/4 @ 1 38 1/4 | 1 29 @ 1 29 1/2 |
| Tuesday..... | 1 38 1/4 @ 1 39 1/4 | 1 29 1/2 @ 1 32 |
| Wednesday..... | 1 40 1/4 @ 1 39 1/4 | 1 31 1/4 @ 1 32 1/4 |

Wheat.

The market for actual wheat, as compared with a week ago, shows little change. For shipping wheat lower prices were talked, but not to exceed 25c per ton under the figures quoted a week ago, and, to have effected wholesale purchases, the above 25c per ton, if not more, would have to have been added to the current price. If there is any difference to record in choice to select milling, it is less favorable to buyers at this date than when last quoted. That prices have held up so well is remarkable, when all the bearish influences of the week are taken into consideration, and shows that present wheat values do not need artificial propping to prevent them from seriously declining. Locally the crop conditions have been improved by liberal showers. It was reported this week that India would have a good yield; that the Argentine harvest was turning out better than expected; and that Australia would have more of a surplus than was thought possible a month ago. With all this in favor of the bears, prices for actual wheat in the local market have suffered no depreciation.

There is still considerable interest centered in the recent wheat deal in Chicago, as to the final outcome of the same, whether it will result in the price being crowded to 2c per lb., some having predicted even higher figures, or whether it will be forced down to 75c per bushel, the 1 1/4c per lb. basis. It is extremely doubtful if either extreme will be reached during the present campaign, or while the big block of wheat now under the control of the Chicago bull clique continues to be a factor in the market. Both the contending factions in the deal are understood to be very strong financially. All parties have certainly had to put up large quantities of coin to get to this stage of the game. With both sides it is a cold-blooded, selfish, money-making proposition, with no desire or intention to further any interests except their own. Any benefits outsiders may receive will be purely incidental, wholly unintended by those conducting this struggle and trying to clinch each other. The bulls are accused of keeping wheat tied up, to the detriment of millers and consumers, while the bears are charged with making inferior wheat serve the purpose of a first-class article, and of mixing corn with wheat in the manufacture of flour, in their efforts to keep the market down. It would prove expensive business for the manipulators to force prices down to 75c per bushel, and would be about equally expensive, under conditions existing at the present time, to crowd values to \$1.25 per bushel or \$2 per cental. As before stated, neither party in any wheat deal is in to sink money for the benefit of either millers or wheat growers, and for this reason alone, to say nothing of others which might be named, the chances are very remote for either of the extremes above indicated being established. If manip-

ulation should crowd values anyways near to one or the other of the points in question, the price would in all probability prove so temporary that those on the outside would have little or no opportunity to benefit therefrom.

| | |
|-------------------------------------|---------------------|
| California Milling..... | \$1 45 @ 1 50 |
| Cal. No. 1 shipping, alongside..... | 1 41 1/4 @ 1 43 1/4 |
| Oregon Valley..... | 1 40 @ 1 43 1/4 |
| Walla Walla Blue Stem..... | 1 42 1/4 @ 1 47 1/4 |
| Walla Walla Club..... | 1 32 1/4 @ 1 42 1/4 |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 white wheat per cental for the week were as follows for the options named:

| |
|--|
| May, 1898, delivery, \$1.37 1/2 @ 1.40 1/4. |
| December, 1898, delivery, \$1.29 @ 1.34 1/2. |
| Wednesday, at regular noon session of Call Board, May wheat sold at \$1.40 1/4 @ 1.39 1/4. |
| December, 1898, \$1.31 1/2 @ 1.32 1/2. |

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|-------------------|--------------------|
| Liv. quotations..... | 6s 9d @ 6s 10d | 8s 1d @ 8s 1 1/2 d |
| Freight rates..... | \$5 @ 16 1/4s | 30 @ 32 1/4s |
| Local market..... | \$1.40 @ 1.47 1/2 | \$1.42 1/2 @ 1.45 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

The market is without important change. A little easier tone is exhibited, but quotable values remain as before. This commodity has for some time past been selling below the parity of wheat values, leaving no room for further cuts, except at a loss. Were it not for the profits on bran and middlings, most of the millers now running would be losing money. The formation of milling trusts and the desire to shut out all competition has had much to do with bringing about the above result.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | \$3 00 @ 3 25 |
| Superfine, good to choice..... | 3 35 @ 3 60 |
| Country grades, extras..... | 4 00 @ 4 25 |
| Choice and extra choice..... | 4 25 @ 4 50 |
| Fancy brands, jobbing..... | 4 50 @ 4 65 |
| Oregon, Bakers' extra..... | 3 90 @ 4 25 |
| Walla Walla, Bakers' extra..... | 3 90 @ 4 25 |

Barley.

The market for this cereal showed more strength than for preceding week, although it was natural that it should be weaker, owing to the rainy weather which has been experienced in the meantime. Although a good barley crop is far from being assured, the prospects are much better than they were a week ago. With seasonable showers during the spring months, there will likely be a fair yield in a large portion of the State. While the market tended against buyers, values on spot offerings of both Feed and Brewing qualities were better sustained than were prices in the speculative market. The existing firmness is due to very light spot stocks.

| | |
|---------------------------------|---------------------|
| Feed, No. 1 to choice..... | 1 02 1/2 @ 1 05 |
| Feed, fair to good..... | 1 00 @ 1 02 1/2 |
| Brewing, No. 1 to choice..... | 1 07 1/2 @ 1 17 1/2 |
| Chevalier, No. 1 to choice..... | @ - |
| Chevalier, No. 2..... | @ - |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

| |
|--|
| May, 1898, delivery, 93 3/4 @ 94 1/4. |
| December, 1898, delivery, @ - c. |
| Wednesday at regular noon session of the Call Board May, 1898, feed sold at 91 1/2 @ 92 1/2 c. |

Oats.

Holders are contending for much the same figures as for a week or two preceding, but the market is easier. Arrivals were not so heavy as previous week, but were of fair proportions and were mainly from Washington. Stocks and offerings are mostly white varieties. Supplies of choice to select colored oats are so light that little more than nominal quotations for the same can be given.

| | |
|-------------------------------|---------------------|
| White Oats, fancy feed..... | 1 20 @ 1 25 |
| White, good to choice..... | 1 15 @ 1 20 |
| White, poor to fair..... | 1 10 @ 1 12 1/2 |
| Gray, common to choice..... | 1 15 @ 1 20 |
| Milling..... | 1 17 1/2 @ 1 22 1/2 |
| Surprise, good to choice..... | 1 20 @ 1 27 1/2 |
| Black Russian..... | 1 20 @ 1 40 |
| Red..... | 1 10 @ 1 50 |

Corn.

The advanced figures established the preceding week resulted in landing corn here from the East. Buyers had probably considerable to do with bringing about this result, knowing that if these were free importations of Eastern it would prove a strong club in their hands to beat down values of the home product later on. This imported corn is principally mixed Yellow, and competes mainly with the market for Large Yellow, although

indirectly other varieties are more or less affected. Values for Large White and both Large and Small Yellow were well sustained up to the close.

| | |
|----------------------------------|-----------------|
| Large White, good to choice..... | 1 07 1/2 @ 1 10 |
| Large Yellow..... | 1 10 @ 1 12 1/2 |
| Small Yellow..... | 1 10 @ 1 15 |
| Eastern Yellow..... | @ - |
| Egyptian White..... | @ - |
| Popcorn, shelled, 3 lb..... | @ - |

Rye.

Market cannot be termed particularly firm, but is not materially lower than last quoted. Receipts and offerings are of small volume.

| | |
|--------------------------|-----------------|
| Good to choice, new..... | 1 05 @ 1 07 1/2 |
|--------------------------|-----------------|

Buckwheat.

Buyers are at as great disadvantage as previously noted. Spot stocks are mostly concentrated in few hands.

| | |
|---------------------|-------------|
| Good to choice..... | 1 75 @ 1 85 |
| Silverskin..... | @ - |

Beans.

The market remains strong for colored beans, but no radical advances have been established in quotable rates over the figures of the preceding week. Should a particularly active demand set in, asking figures would undoubtedly be moved further upward. Values for white beans have been tending to higher levels, in sympathy with the comparatively stiff figures now current on colored. It is quite evident that there is still ample room for values of white beans to improve without getting to abnormally high levels. Limas are being held practically the same as last quoted, with tendency rather to more firmness than otherwise.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 50 @ 1 60 |
| Small White, good to choice..... | 1 50 @ 1 65 |
| Lady Washington..... | 1 45 @ 1 55 |
| Butter, small..... | 1 35 @ 1 50 |
| Butter, large..... | 1 60 @ 1 75 |
| Pinks..... | 2 60 @ 2 75 |
| Bayos, good to choice..... | 2 90 @ 3 00 |
| Reds..... | 1 60 @ 1 75 |
| Red Kidneys..... | 2 00 @ 2 25 |
| Limas, good to choice..... | 1 65 @ 1 75 |
| Black-eye Beans..... | 2 25 @ 2 50 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

The bean market on the Atlantic side is reported as follows, by recent mail advices from New York, prices quoted being per 60-pound bushel:

Values for nearly all varieties of beans have settled to a little lower level under the influence of some pressure to sell, and rather an unsatisfactory trade on the whole. Exporters took several lots of choice Marrow just at the close of last week, and made other purchases during the early part of this week, so that the shipments foot up about 1000 hhls. The larger part of these orders were filled at \$1.32 1/2, and there have been some other sales of fine goods on the market at \$1.30. Home jobbers have bought very sparingly and that demand has given no support to the market. In some quarters we find a little steadier feeling at the close, based upon the belief that receipts will run lighter for awhile. Medium have ruled uncommonly dull, and while \$1.15 is still asked for very fancy quality some choice marks have sold at \$1.12 1/2. More Pea than medium have been wanted but the supply of the former is much larger and the best goods have settled to \$1.10. Exporters have taken at least 1000 hhls. of Red Kidney during the week, but there was quite strong competition to secure the orders and prices were cut 2 1/2 @ 5c on part of the business; our quotations represent the general trading basis at the close. White Kidney have had a little call from shippers at \$1.45 @ 1.50. Turtle Soup in small supply and rather firmly held. Yellow Eye not plenty and steady. Lima are closing with a slightly firmer tone; recent sales mainly at \$1.30, but more is asked for some of the choice new stock. Green peas have sold fairly and the feeling is firm.

Dried Peas.

There is little doing in Dried Peas of any description, more due to very limited offerings of good to choice qualities than to absence of demand.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 90 @ 2 00 |
| Niles Peas..... | 1 40 @ 1 50 |

Hops.

The local market shows steadiness, with fair outward movement, and very few arriving from producing points. Dealers are not eager to purchase at full current figures, however, unless they require the hops in the filling of immediate orders. The last Australian steamer took over 200 bales. Local brewers are not purchasing to any noteworthy extent at present.

Good to choice, 1897 crop..... 12 @ 16

Advices by mail from New York of a late date furnish the following concerning the hop market:

While there has not been quite so much activity in the market this week the quantity of stock moved in one direction or another has been fair for the season of year and values hold firm for all qualities. London cable advices have continued strong, and exporters have made constant inquiries not only for the choicest grades, which have heretofore been in most demand, but for good lots as well. They have purchased some stock here and in the interior, and more than 2000 bales have arrived in transit for export, including some long lines from the Pacific coast. Brewers have not shown quite the activity to secure supplies that recently characterized their operations, but they have made some purchases during the week, particularly of 15 @ 18c grades, as well as of yearlings at 7 @ 8 1/4c generally. Quotations are in the main unchanged; a few choice State '97 have sold at 19c, and that figure is as high as business has been done in Pacific coast hops, though some favorite growths are held higher. There is not a great deal of real common State stock to be had,

but plenty of poor, moldy Oregon bops, and these are very unsalable; it is possible that some of the poorest lots could be bought below our lowest figures.

Wool.

A moderate amount of business has been lately transacted in the local market, mainly in the shape of transfers to woolen mills on this coast. Local scourers have not been lately purchasing to any noteworthy degree, being still quite liberally stocked with wools secured last summer and fall. There is considerable inquiry from the East, and it is believed that it will result in business in the near future. Quotable values are without change.

SPRING.

| | |
|-----------------------------------|---------|
| Oregon Valley..... | 17 @ 18 |
| Oregon Eastern, choice..... | 13 @ 15 |
| Oregon Eastern, fair to good..... | 10 @ 12 |

FALL.

| | |
|----------------------------|-----------|
| Middle County, free..... | 10 @ 13 |
| Do do defective..... | 9 @ 11 |
| Northern, free..... | 11 @ 14 |
| Do defective..... | 10 @ 11 |
| Southern Mountain..... | 9 @ 12 |
| San Joaquin defective..... | 7 @ 8 1/4 |

Hay and Straw.

Buyers have not been taking hold so freely in the hay market as for a week or two preceding, being under the impression that they will be able to operate to better advantage later on, as crop prospects have brightened, and green feed is likely to be plentiful in about a month. Hay is not materially lower, however, as remaining supplies are light and are apt to be all absorbed before the season closes, even with fresh green feed in good supply from this time forward. Values for straw were maintained at about same range as last quoted.

| | |
|----------------------|---------------|
| Wheat..... | 15 00 @ 18 50 |
| Wheat and Oat..... | 14 00 @ 17 50 |
| Oat..... | 14 00 @ 17 00 |
| Barley..... | 12 00 @ 15 00 |
| Clover..... | 11 00 @ 13 00 |
| Stock Hay..... | 10 00 @ 12 00 |
| Alfalfa..... | 10 00 @ 11 50 |
| Compressed..... | 15 00 @ 18 50 |
| Straw, 3/4 bale..... | 40 @ 50 |

Millstuffs.

Demand for most descriptions of millstuffs has been hardly so active as for a fortnight or more past. The market did not rule any more favorably to buyers than last quoted; changes in values were not very pronounced.

| | |
|---------------------|---------------|
| Bran, 3/4 ton..... | 21 00 @ 22 50 |
| Middlings..... | 22 00 @ 25 00 |
| Barley, Rolled..... | 22 00 @ 23 00 |
| Cornmeal..... | 24 00 @ 24 50 |
| Cracked Corn..... | 21 50 @ 25 00 |

Seeds.

Business in most kinds of seeds is of an exceedingly light order at present, leaving little upon which to base quotations. Especially does this apply to mustard, flax and bird seed. Alfalfa is meeting with a little inquiry; stocks of this variety are ample for all probable requirements.

| | |
|----------------------------|-------------|
| Mustard, Yellow..... | 2 75 @ 3 00 |
| Mustard, Trieste Seed..... | 2 75 @ 3 00 |
| Mustard, Wild Brown..... | 2 00 @ 2 25 |
| Flax..... | 2 15 @ 2 25 |

| | |
|--------------------|---------------|
| Canary..... | 2 1/4 @ 2 3/4 |
| Rape..... | 2 1/4 @ 2 3/4 |
| Hemp..... | 2 1/4 @ 2 3/4 |
| Alfalfa, Utah..... | 5 1/4 @ 6 1/4 |

Bags and Bagging.

The State Prison directors have fixed the price of San Quentin grain bags for the coming season at \$5.30 per 100, limiting single orders to 5,000. In Calcutta bags no business of consequence has been so far reported. In other bags and bagging trade is slow and there are no changes to note in quotable rates.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, buyer July..... | @ - |
| Calcutta Grain bags, 22x36, spot..... | 5 1/4 @ 5 1/2 |
| State Prison bags, per 100..... | 5 30 @ - |
| Wool sacks, 4 lb..... | 30 @ - |
| Wool sacks, 3 1/2 lb..... | 27 @ - |
| Gunnies..... | 10 @ - |
| Bean bags..... | 4 1/2 @ 4 3/4 |
| Fruit sacks, cotton..... | 5 1/4 @ 6 1/4 |

Hides, Pelts and Tallow.

The improved figures last quoted for Dry Hides continue in force. Market for Wet Salted Hides is firm at former values. Pelts are selling to as good advantage as previously quoted. Tallow of desirable quality meets with prompt custom at full current figures.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|-------------|
| Heavy Steers, over 55 lbs..... | 10 1/2 @ - | 9 1/4 @ - |
| Medium Steers, 48 to 55 lbs..... | 9 1/2 @ - | 8 1/4 @ - |
| Light Steers, under 48 lbs..... | 9 @ - | 8 @ - |
| Heavy Cow Hides, over 50 lbs..... | 9 @ 9 1/4 | 8 @ 8 1/4 |
| Light Cow Hides, under 50 lbs..... | @ 9 | @ 8 |
| Wet Salted Kip..... | @ 10 | @ 9 |
| Wet Salted Veal..... | @ 10 | @ 9 |
| Wet Salted Calf..... | @ 11 | @ 10 |
| Dry Hides..... | 17 @ 17 1/2 | 13 1/4 @ 14 |
| Dry Kip and Veal, 11 to 15 lbs..... | 14 @ 15 | @ 11 |
| Dry Calf, under 4 lbs..... | 18 @ 20 | 16 @ 17 |
| Horse Hides, large..... | 2 25 @ 2 75 | 2 00 @ 2 25 |
| Horse Hides, small..... | 25 @ 50 | 25 @ 50 |
| Colts' Hides..... | 25 @ 50 | 25 @ 50 |
| Pelts, long wool, per skin..... | 90 @ 130 | 70 @ 90 |
| Pelts, short wool, per skin..... | 40 @ 70 | 40 @ 70 |
| Pelts, shearing, per skin..... | 20 @ 30 | 20 @ 30 |
| Deer Skins, best summer..... | 25 @ 30 | 25 @ 30 |
| Deer Skins, good medium..... | @ 20 | @ 10 |
| Deer Skins, thin winter..... | @ 10 | @ 10 |
| Elk Hides..... | 8 @ 10 | 8 @ 10 |
| Tallow, good quality..... | 3 @ 3 1/4 | 2 @ 2 1/4 |
| Tallow, No. 2..... | 2 @ 2 1/4 | 2 @ 2 1/4 |
| Goat Skins, perfect..... | 20 @ 37 1/2 | 20 @ 37 1/2 |
| Goat Skins, damaged..... | 10 @ 20 | 10 @ 20 |
| Kid Skins..... | 5 @ 10 | 5 @ 10 |

Honey.

Choice to select qualities of both Comb and Extracted are being quite steadily held, and

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are in only moderate supply. There are fairly liberal stocks of Amber and Dark honey, especially as compared with the demand for the same. Market for the latter two kinds cannot be said to be favorable to sellers, as these sorts move slowly at comparatively low figures.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 4 1/2 @ 5 |
| Extracted, Light Amber..... | 3 1/2 @ 4 |
| Dark Tule..... | 1 1/2 @ 2 1/2 |
| White Comb, 1-lb frames..... | 7 1/2 @ 9 1/2 |
| Amber Comb..... | 4 @ 6 |

Beeswax.

There is no surplus of this article, and not likely to be the current season. The market is firm, but is not quotably higher.

| | |
|---------------------------|---------|
| Fair to choice, # lb..... | 22 @ 24 |
|---------------------------|---------|

Live Stock and Meats.

Prices for Beef are without quotable change, but market is very quiet, with general tendency in favor of buyers. Mutton is not arriving freely, and is commanding tolerably firm figures, particularly for choice and fat ewes and wethers and also select yearlings. Hogs were in a little better supply than previous week, but strictly choice, large and hard commanded fully as good figures as last quoted.

| | |
|---|---------------|
| Beef, 1st quality, dressed, net # lb..... | 6 @ 6 1/2 |
| Beef, 2d quality..... | 5 1/2 @ 6 |
| Beef, 3d quality..... | 4 @ 5 |
| Mutton—ewes, 6 1/2 @ 7c; wethers..... | 7 @ 7 1/2 |
| Hogs, hard grain fed, medium..... | 3 1/2 @ 4 |
| Hogs, small..... | 3 1/2 @ 3 1/2 |
| Hogs, large hard..... | 3 1/2 @ 4 |
| Hogs, soft and feeders..... | 3 1/2 @ 3 1/2 |
| Hogs, country dressed..... | 4 1/2 @ 4 1/2 |
| Veal, small, # lb..... | 6 @ 7 1/2 |
| Veal, large, # lb..... | 6 1/2 @ 7 |
| Lamb, # lb..... | 7 @ 8 |

Poultry.

This market showed little improvement, except for Young Ducks, Goslings and Young Pigeons, these descriptions being salable to fair advantage. Turkeys went at a little higher range than last quoted. Dressed commanding relatively better figures than Live, although the latter sold at slightly higher prices than current for several weeks preceding. Old poultry was in excessive supply most of the time, and went at generally low figures. Eastern poultry continued to arrive quite freely, and to this fact was largely due the continued depression of the market for ordinary California chickens.

| | |
|------------------------------------|-------------|
| Turkeys, dressed, # lb..... | 13 @ 15 |
| Turkeys, live hens, # lb..... | 10 @ 12 1/2 |
| Turkeys, live gobblers..... | 10 @ 12 |
| Hens, Cal., # doz..... | 3 00 @ 4 00 |
| Roosters, old..... | 3 25 @ 3 50 |
| Roosters, young, (full-grown)..... | 4 00 @ 5 00 |
| Fryers..... | 4 50 @ 5 00 |
| Broilers, large..... | 4 50 @ 5 00 |
| Broilers, small..... | 3 00 @ 4 00 |
| Ducks, young, # doz..... | 4 50 @ 5 00 |
| Ducks, old..... | 3 50 @ 4 50 |
| Geese, # pair..... | 1 25 @ 1 50 |
| Goslings, # pair..... | 1 75 @ 2 50 |
| Pigeons, Old, # doz..... | 90 @ 1 00 |
| Pigeons Young..... | 1 50 @ 1 75 |

Butter.

There was an easier feeling in the butter market, partly due to a moderate increase in arrivals and partly owing to improved prospects for feed in the various dairy sections. Quotable values did not decline materially, but there are indications that lower prices will prevail at an early day. As before asserted, however, there is no likelihood of values touching as low levels as last year. As to packed butter, the market is bare of local product, but there is some Eastern here, and this is also affecting unfavorably the market for the fresh article.

| | |
|-------------------------------------|---------|
| Creamery extras, # lb..... | 27 @— |
| Creamery firsts..... | 26 @— |
| Creamery seconds..... | 25 @— |
| Dairy select..... | 24 @ 25 |
| Dairy seconds..... | 23 @ 24 |
| Dairy, soft and weedy..... | — @— |
| Mixed store..... | 15 @ 18 |
| Creamery in tubs..... | 23 @ 25 |
| Pickled roll..... | — @— |
| Dairy in tubs..... | — @— |
| Firkin, Cal., choice to select..... | 22 @ 24 |
| Firkin, common to fair..... | 18 @ 21 |

Cheese.

Market shows much the same condition as stated in former review. Supplies are not extra large, but there is a sufficiency of both held cheese and fresh product to accommodate the immediate demand. Sellers are, as a rule, anxious to keep stocks moving, seeing nothing to be gained by refusing to let go at the current rates. Concessions are occasionally granted rather than miss a sale of fairly liberal proportions.

| | |
|-----------------------------------|-------------|
| California fancy flat, new..... | 10 1/2 @ 11 |
| California, good to choice..... | 9 @ 10 |
| California, fair to good..... | 8 @ 9 |
| California Cheddar..... | 10 @ 11 1/2 |
| California, "Young Americas"..... | 10 @ 12 |

Eggs.

As foreshadowed in these columns last week, the firmness then recorded as existing proved of short duration. Not only were there increased arrivals of home product, with buyers operating as lightly as their necessities would permit, fearing further declines; but to make matters worse, several carloads of Eastern eggs were landed here. The latter sold down to 16c. Fresh, direct from ranch, went as low as 20c.

| | |
|---|---------|
| California, select, large white and fresh..... | 22 @— |
| California, select, irregular color & size..... | 20 @ 21 |
| California, good to choice store..... | 18 @ 20 |
| California, common to fair store..... | — @— |
| Oregon, prime..... | — @— |
| Held Eastern, as to section and grading..... | — @— |
| Local Cold storage eggs..... | — @— |

Vegetables.

Supplies of all winter and spring vegetables were seldom lighter at corresponding date. Onions continue to command firm figures, with quotable values at a little higher range than last noted. Oregon onions now constitute the bulk of supplies of this vegetable. Peas made a little better showing than previous week, both as to quality and quantity, and met

with good custom. Prices for other vegetables in season remained on a tolerably high plane.

| | |
|-------------------------------------|-------------|
| Asparagus, # lb..... | 15 @ 30 |
| Beans, String, # lb..... | 10 @ 20 |
| Beans, Lima, # lb..... | — @— |
| Beans, Refugee, # lb..... | — @— |
| Beans, Wax, # lb..... | — @— |
| Cabbage, choice garden, # 100..... | 70 @ 80 |
| Cauliflower, # doz..... | 60 @ 70 |
| Corn, Green, # sack..... | — @— |
| Corn, Alameda, # crate..... | — @— |
| Cucumbers, Alameda, # box..... | — @— |
| Egg Plant, # lb..... | — @— |
| Garlic, # lb..... | 4 @ 4 1/2 |
| Mushrooms, Buttons, # lb..... | — @— |
| Mushrooms, Wild, # lb..... | — @— |
| Okra, Dried, # lb..... | 12 1/2 @ 15 |
| Onions, Yellow, good to choice..... | 2 00 @ 2 25 |
| Onions, Yellow, cut..... | 1 7 @ 9 |
| Peas, Sweet, Garden, # lb..... | 20 @ 25 |
| Peppers, Green Chile, # lb..... | — @— |
| Rhubarb, # box..... | — @— |
| Squash, Summer, # lb..... | — @— |
| Tomatoes, # box or crate..... | 75 @ 1 50 |

Potatoes.

The tendency of values for potatoes of nearly all descriptions now offering has been to higher levels, the firmness being most pronounced on choice to select Burbanks for table use. Desirable qualities of early potatoes for seeding purposes were also held at tolerably stiff figures. Sweeters were in very light supply, but were not much sought after.

| | |
|--|-----------|
| Early Rose, River, # cental..... | 70 @ 80 |
| Peerless, River..... | — @— |
| Reds River..... | 50 @ 65 |
| Garnet Chile, Mission..... | — @— |
| Burbanks, Salinas..... | 75 @ 80 |
| Burbanks, River, # sack..... | 60 @ 80 |
| Burbanks, Petaluma and Tomales, # cti..... | 60 @ 80 |
| Burbanks, Oregon, # cental..... | 70 @ 1 10 |
| Garnet Chile, Oregon..... | — @— |
| Sweet River, # cental..... | — @— |
| Sweet Merced..... | 75 @ 90 |

The Fruit Market.

Fresh Fruits.

The condition of the market for apples, the only deciduous fruit now offering in a fresh state, has not changed to any very marked degree since last review. The quantity of apples on the market is not large, being of lighter volume than at any previous time in the past two months. Of ordinary qualities, however, there are still more than enough for all immediate requirements, despite the fact of prices being so reasonably low that neither retail dealers nor consumers have occasion to find fault with the values prevailing. When it comes to a strictly choice apple, large, sound, of favorite variety and in every way desirable, it is a scarce article. Fastidious consumers do not hesitate to pay fairly good prices for such stock, more in some instances than is warranted as a quotable figure. There are ordinarily few high-grade apples offering at this time of year, but present stocks of select quality are unusually light, even for this date. A very large proportion of the best apples on the coast was earlier in the season forwarded East.

| | |
|--------------------------------------|-------------|
| Apples, fancy, 4-tier, # box..... | 1 25 @ 1 50 |
| Apples, choice, 4-tier, # box..... | 75 @ 1 00 |
| Apples, fair to good, 50-lb box..... | 50 @ 75 |
| Apples, common to fair, # box..... | 35 @ 50 |

Dried Fruits.

While there has been a moderate outward movement the past week in cured and evaporated fruits, the market was far from being in satisfactory condition for the producing or selling interest. Prunes continued to hold their own fairly well, but of other than 40-50's and 90-100's the offerings were much more liberal than was warranted by the immediate demand. Large Prunes are virtually out of stock and small ones are difficult to secure in wholesale quantity, present supplies being composed mainly of the medium sizes. Apples are in slim stock, but there is little inquiry for them at existing rates and market lacks strength. Apricots are being steadily held, especially desirable qualities, but there is not much trading in them at this date. Values for Peaches of desirable quality are being fairly well sustained, supplies of this fruit being light. Peaches are in the worst position of any variety on the list and are quotably lower. It is estimated that there are over 100 carloads of this fruit remaining in the State, as against only about twenty-five carloads a year ago. The reduced values may in the near future cause a speedy revival of trade and make heavy inroads upon supplies, as much of the inquiry which is being received from the East is for low-priced fruit, quality with some of the would-be buyers being a secondary consideration.

EVAPORATED OR BLEACHED.

| | |
|---|---------------|
| Apricots, Royal, in sacks, per lb..... | 5 1/2 @ 6 |
| Apricots, Moorpark..... | 6 1/2 @ 7 |
| Apricots, Moorpark..... | 7 @ 9 |
| Apples, in boxes..... | 7 @ 7 1/2 |
| Figs, fancy pressed..... | 8 @ 10 |
| Nectarines, White..... | 4 1/2 @ 5 |
| Nectarines, Red..... | 4 1/2 @ 5 |
| Peaches, unpeeled, choice..... | 4 @ 4 1/2 |
| Peaches, unpeeled, fancy..... | 5 @ 6 |
| Peaches, peeled, in boxes..... | 7 @ 12 |
| Peas, unpeeled Bartlett's, halved, fancy..... | 4 1/2 @ 6 |
| Peas, quartered, unpeeled Bartlett's..... | 4 @ 5 |
| Pears, peeled and sliced..... | — @— |
| Plums, pitted..... | 4 1/2 @ 5 1/2 |
| Prunes, in sacks, 40-50's..... | 5 @ 5 1/2 |
| 50-60's..... | 3 1/2 @ 3 1/2 |
| 60-70's..... | 3 1/2 @ 3 |
| 70-80's..... | 2 1/2 @ 2 1/2 |
| 80-90's..... | 2 @ 2 1/2 |
| 90-100's..... | 2 @ 2 1/2 |

Above figures are on basis of 2 1/2 @ 3c for 4 sizes. Prunes in boxes, 1/4c higher for 25-lb boxes, 1/4c higher for 50-lb boxes.

| | |
|---------------------------------------|-----------|
| 4 sizes Santa Clara and Equal..... | 2 1/2 @ 3 |
| 4 sizes San Joaquin and Northern..... | 2 1/2 @— |
| Prunes, Silver..... | 5 @ 8 |

COMMON SUN-DRIED.

| | |
|-------------------------|-----------|
| Apricots, ordinary..... | 4 @ 5 1/2 |
| Apples, sliced..... | 3 1/2 @ 4 |
| Apples, quartered..... | 3 1/2 @ 4 |
| Figs, Black..... | 2 @ 3 1/2 |
| Figs, White..... | 3 @ 4 |
| Peaches, unpeeled..... | 3 @ 4 |
| Plums, unpitted..... | 1 @ 1 1/2 |

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The situation as regards dried fruits in the East is reported as follows, under recent date, by a New York authority:

The demand for evaporated apples has continued fair and with light offerings market has been well sustained; in fact, toward the close there has been some disposition to ask a little more money for prime wood-dried, though little business accomplished above 8 1/2c as yet. Sun-dried have continued in light supply and dull, except Southern sliced, which have a fair amount of attention. Chops and waste have had more demand and rule firmer, though outside quotations are extreme. Raspberries and other small fruits in light supply but moving slowly and outside figures rather full. California fruit has been quite plentiful and with a fairly active demand, especially for the medium and lower grades of peaches and apricots market has ruled firm. Prunes firm but not higher.

| | |
|--|---------------|
| Apricots, Cal. Moorpark, 1897, per lb..... | 7 @ 11 |
| Apricots, Cal. Royal, 1897, per lb..... | 5 1/2 @ 8 1/2 |
| Peaches, Cal., 1897, peeled, per lb..... | 10 @ 18 |
| Peaches, Cal., 1897, unpeeled, per lb..... | 5 1/2 @ 10 |
| Pears, Cal., 1897, per lb..... | 6 @ 10 |
| Prunes, Cal., 1897, per lb..... | 3 @ 8 |

Raisins.

The market for Raisins remains quiet, with values quotably the same as noted in former review. There is considerable inquiry, but it is mainly for choice, which are wanted at about as low figures as are current for rain-damaged stock. The latter sort is plentiful, both here and at the distributing points east of the Rockies.

F. O. B. FRESNO DELIVERY.

| | |
|--------------------------------------|-------------|
| Imperial Clusters, per box..... | — @— |
| Dehesa Clusters, per box..... | — @— |
| Fancy Clusters, per box..... | — @— |
| Boxes, London layers, 20-lb box..... | 1 00 @ 1 10 |

(Usual advance for fractions.)

| | |
|------------------------------------|---------------|
| Loose Muscatel, 4-crown, # lb..... | 4 @— |
| Loose Muscatel, 3-crown..... | 3 1/2 @ 3 1/2 |
| Loose Muscatel, 2-crown..... | 2 @— |
| Sultanas..... | 3 1/2 @ 4 |
| Seedless Muscatel..... | 2 @ 2 1/2 |
| Dried Grapes..... | 1 1/2 @ 2 |

Citrus Fruits.

At the tri-weekly auction sales about eight carloads per week are being disposed of. Navel Oranges selling within range of 70c @ \$2.20 per box. Choice Lemons sold at \$1.25 @ 1.50 per box. Grape Fruit went at \$1.60 @ 1.90 per case. Business transacted by jobbers was at unchanged figures. There was a little more activity in the market, especially for Oranges, owing to milder weather.

| | |
|---------------------------------|-------------|
| Oranges—Navel # box..... | 1 00 @ 2 50 |
| Seedlings..... | 65 @ 1 25 |
| Lemons—Cal., select, # box..... | 2 00 @ 2 25 |
| Cal., good to choice..... | 1 25 @ 1 75 |
| Cal., common to good..... | 75 @ 1 25 |
| Limes—Mexican, # box..... | 6 00 @ 7 00 |
| Cal., small box..... | 1 00 @ 1 25 |
| Tangerines, # box..... | 75 @ 1 00 |
| Grape fruit, # crate..... | — @— |

Nuts.

Almonds are now virtually out of market and values are nominal. Walnuts are sold to be cleaned up in the interior and there are only small quantities now remaining here. Business doing in Peanuts is light and is at unchanged values.

| | |
|--------------------------------------|---------------|
| California Almonds, paper shell..... | 7 1/2 @ 8 1/2 |
| California Almonds, soft shell..... | 5 1/2 @ 6 1/2 |
| California Almonds, hard shell..... | 3 @ 3 1/2 |
| Walnuts White, paper shell..... | 6 1/2 @ 7 |
| Walnuts White, soft shell..... | 6 1/2 @ 7 |
| Walnuts White, Cal., standard..... | 5 @ 6 1/2 |
| Chestnuts, Cal. Italian..... | 8 @ 9 |
| Peanuts, Cal., fair to prime..... | 4 @ 4 1/2 |
| Peanuts, Eastern hand-picked..... | 5 @ 6 |
| Pine Nuts..... | 7 @ 8 |

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|--------------------|--------------------|----------------------|
| Flour, 4-sks..... | 122,190 | 3,055,188 |
| Wheat, cts..... | 164,248 | 7,968,897 |
| Barley, cts..... | 106,257 | 3,781,130 |
| Oats, cts..... | 29,580 | 455,191 |
| Corn, cts..... | 5,380 | 213,787 |
| Rye, cts..... | 1,105 | 26,698 |
| Beans, sks..... | 14,540 | 452,560 |
| Potatoes, sks..... | 23,500 | 725,224 |
| Onions, sks..... | 1,300 | 72,742 |
| Hay, tons..... | 3,231 | 88,750 |
| Wool, bales..... | 313 | 49,175 |
| Hops, bales..... | 129 | 7,692 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------|--------------------|----------------------|
| Flour, 4-sks..... | 97,712 | 1,987,930 |
| Wheat, cts..... | 155,675 | 7,713,143 |
| Barley, cts..... | 75,579 | 2,679,294 |
| Oats, cts..... | 215 | 11,381 |
| Corn, cts..... | 748 | 28,737 |
| Beans, sks..... | 2,720 | 254,526 |
| Hay, hales..... | 1,350 | 55,174 |
| Wool, lbs..... | 13,159,776 | 9,100,249 |
| Hops, lbs..... | 14,199 | 852,870 |
| Honey, cases..... | — | 6,435 |
| Potatoes, pkgs..... | 816 | 164,714 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent

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as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, February 9.—California dried fruits, steady. Evaporated Apples, common, 50¢ @ 7 1/2¢ per pound; prime wire tray, 8 1/2¢; wood dried prime, 8 1/2¢; choice, 8 1/2¢; fancy, 9¢ @ 9 1/2¢. Prunes, 3¢ @ 8¢ per pound. Apricots, Royal, 5 1/2¢ @ 7 1/2¢; Moorpark, 9¢ @ 11¢. Peaches, unpeeled, 7¢ @ 10¢; peeled, 12¢ @ 20¢.

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Californian Pine Products.

Mr. W. C. Blasdale recently read a paper before the Science Association of the University of California (Chemical Section), relating to the products obtained by distilling the resins of some Californian pines. Some years ago a liquid was put on the market known as "abietin" or "aurantine," for use in removing grease, etc., and also as an anæsthetic. It was said to be made from the nut-pine. This was examined by Dr. Wenzell of the College of Pharmacy, who published the results of his work. It was afterwards thoroughly investigated by Prof. Thorpe, now head of the British Government laboratories. Prof. Thorpe found the liquid to be nearly pure heptane (C_7H_{16}), which is one of the paraffins, a substance which had only been found in petroleum and fish oil. The occurrence of a paraffin in a vegetable product was so extraordinary that it seemed doubtful whether the material was really obtained from the pine.

Mr. Blasdale therefore collected a quantity of resin from *Pinus Sabiniana* (the well known nut-pine or Digger pine of the foothills) and from several of our native pines, and distilled them in a current of steam. The amounts of material obtained were not large enough to allow of as full investigation as desired, but quite sufficed to show that the true heptane is undoubtedly obtainable from the resin of the nut-pine and also from the black pine (*P. Jeffreyi*) of the timber belt. These two Californian pines differ botanically in many ways from the Old World and Eastern species, which yield the so-called terpenes ($C_{10}H_{16}$) when their resins are distilled. On the other hand, the resin of the Tamarack (*P. Murrayana*) yields a terpene resembling that of the European and Eastern pines. The annexed figures show the average results obtained with the distillates:

| | Boiling point Centigrade. | Specific Gravity. | Index of Refraction. |
|-------------------------------------|------------------------------|----------------------|-------------------------|
| <i>P. Sabiniana</i> (nut pine) 97° | 97° | 0.6860 | 1.390 |
| <i>P. Jeffreyi</i> (black pine) 97° | 97° | 0.6863 | 1.388 |
| <i>P. Murrayana</i> (Tamarack) 160° | 160° | 0.864 | 1.476 |
| Heptane of Professor Thorpe 98.43° | 98.43° | 0.6885 | 1.388 |
| Terpenes (about) 155° to 175° | 155° to 175° | 0.85 | 1.45 to 1.5 |

The distillate from the Tamarack resin alone has a considerable effect upon polarized light, confirming its terpene character, while those of the first two (like true heptane) have scarcely any effect.

A number of products of California pines and firs were exhibited, including the balsam of the silver fir, which closely resembles Canada balsam, so largely used in microscopic work, and might be used for the same purpose.

Never throw away a piece of zinc. If it is used in the kitchen around the range, save all the trimmings, when the edges become broken or ragged and must be cut off, and when at last it is worn out and has to be replaced, save the old piece, cut it up with an old pair of shears or bend and break it into pieces, and occasionally throw some of it in the coals when you have a hot fire, and it will seldom be necessary to have the flue cleaned.

Testing Dairy Cows.

Dairying is every year becoming more of a science, and to-day it requires just as much if not greater ability to run a successful dairy than it does to conduct a mercantile business. Farmers now have to test their cows. In creamery sections the best creameries have small Babcock tests on hand solely for the purpose of loaning to their dairy patrons. The test generally adopted for this farm work is the small \$10-machine manufactured by the Elgin Manufacturing Co., Elgin, Ill. Complete instructions go with it and it can be readily operated by the average farmer.

Machinery Business Looking Up.

Loomis & Nyman of Tiffin, Ohio, makers of well-boring and drilling machinery, say that their business for January is greater than for any three months in the past two years, and that the demand for their well-known machinery has come from many localities widely separated, which shows conclusively that all parts of the country are in better shape so far as purchasing power of the people is concerned. They report having shipped large orders to Texas, California, Kansas and Michigan, and smaller orders to dozens of the other States.

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The Divining Rod.

M. E. Wadsworth, of the Michigan College of Mines, gives the following theory of the mechanical action of the divining rod, which he says has been repeatedly tested by him in the presence of his classes and shown to be correct. The process is exceedingly simple. Take any forked twig of reasonably tough fiber in the clenched hands with the palms upward. The ends of the limbs forming the twig-fork should enter the closed fist on the exterior side of each fist, i. e., on the two sides of the clenched hands furthest from each other.

When a twig is grasped in this position it will remain stationary if held loosely or with only a moderately firm grasp, but the moment the grasp is tightened the pressure on the branches will force the end of the twig to bend downwards. The harder the grip the more it must curve.

The curvature of the twig is mechanically by the pressure of the hand, forcing the limbs to assume a bent and twisted position; or the force that causes the forked limb to turn downwards is furnished by the muscles of the hands, and not by any other cause.

The whole secret of the divining rod seems to reside in its position in the hands of the operator, and in his voluntarily or involuntarily increasing the closeness of his grasp on the two ends of the branches forming the fork.

If the above conditions are fulfilled, the twig will always bend downwards—water or no water, mineral or no mineral. Any one can be an operator, and any material can be used for an instrument, provided the limbs forming the fork are sufficiently tough and flexible.

It can be easily understood how an ignorant operator may deceive himself and be perfectly honest in supposing that some occult force, and not his hands, causes the fork to curve downwards.

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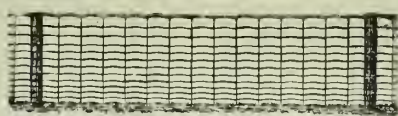
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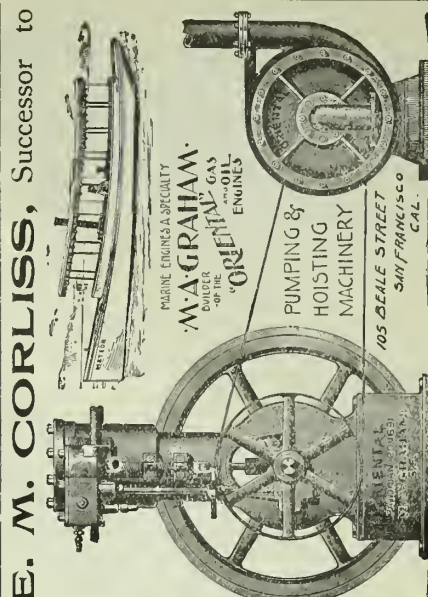
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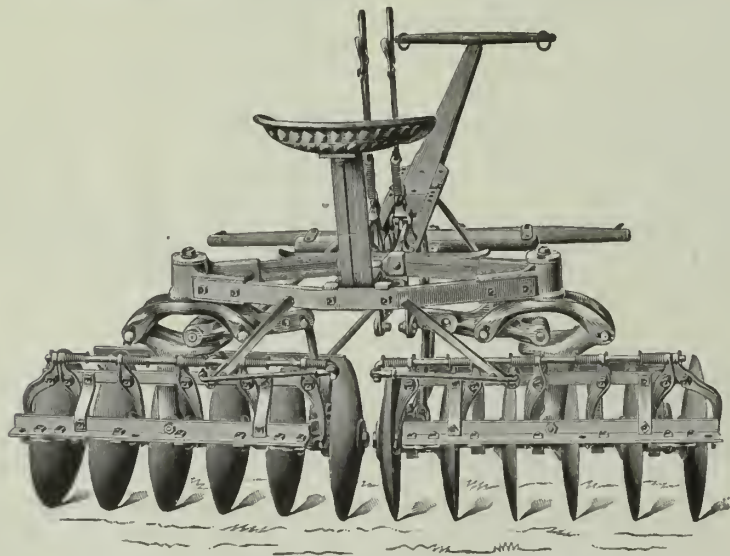
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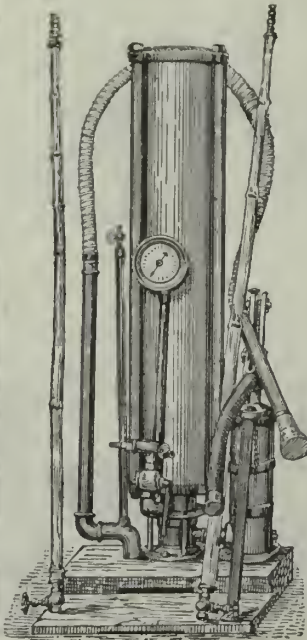
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LOS GATOS, CAL.

THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 8.

SAN FRANCISCO, SATURDAY, FEBRUARY 19, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

California Combined Harvesters.

The development of the combined harvester is one of the most distinguished industrial achievements of California. It was characteristically Californian in the largeness of its conception; in its adaptation to the great, level seas of land upon which it was first designed to operate; in the multitude of animals arranged to furnish its motive power, and in the few men required in its operation. In all these respects it was suited to California spirit and California conditions and requirements, and its success from the very start was a most striking demonstration of its fitness. By the same sign it was, at the time of its early success in California, unsuited to the wants and ideas of grain growers elsewhere. On its first introduction for trial in Australia it seemed to be the solemn judgment of the colonial jury that no machine which used twenty-four to thirty horses at once could be considered as practicable, and, having read the team out of court, there was no further occasion to consider the machine. This was more than fifteen years ago. But the Australian demurrer did not stop the combined harvester. It proceeded at once to save wheat growing for export in California by reducing the cost of production so that the grower could still realize a profit, although the price of wheat fell to the lowest point known in the world's history.

But the combined harvester did not remain long in the same form with which its first triumph was won. It has been progressively improved by different manufacturers until the models now in favor are vastly better than the older ones in many respects. These improvements relate in part to the minor features of the machine, so that better and more effective work is done, but other still more sweeping changes have been made. At first the large band of horses furnished not alone propulsion, but driving power for the operation as well. Now distinct motors

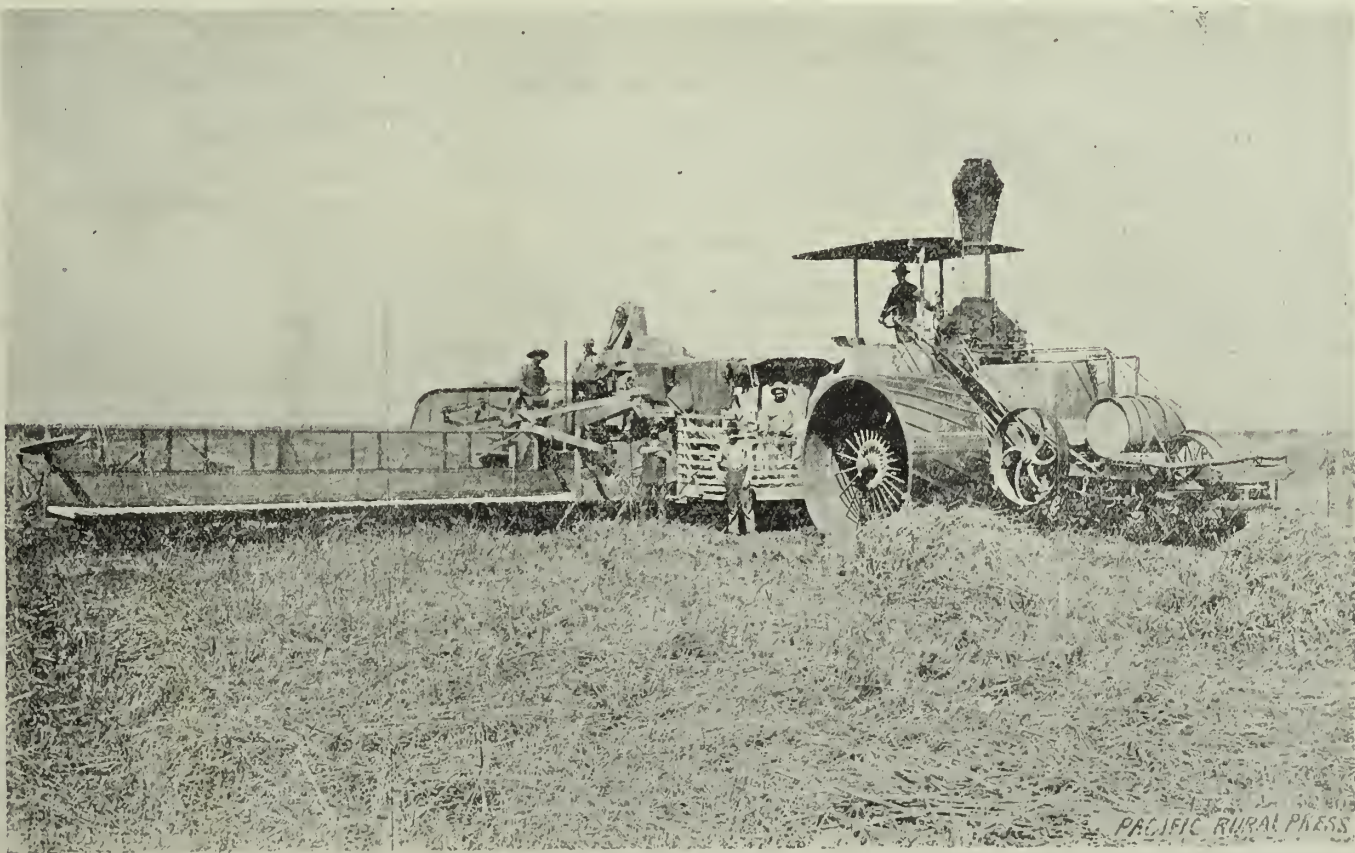
prevail, with most obvious advantage, and entirely new means of propulsion are employed. It would be an interesting thing to trace the development of the machine step by step from original form to the present patterns, and its progress from California to other of the large wheat fields of the world, but this cannot be undertaken at this time.

One of the most striking improvements in the combined harvester is shown in the engravings on this page. It is really a new type, which owns Mr. Daniel Best of San Leandro as its originator, and

which has shown its value by its satisfactory achievements for several years back. As the engravings show, the pattern is based upon the traction engine principle. The larger picture shows the harvester operating on reclaimed land on Roberts island, near



BEST HARVESTER ON ROLLING LAND IN OREGON.



BEST'S NEW STEAM HARVESTER IN HEAVY, FLAT GRAIN ON ROBERTS ISLAND, SAN JOAQUIN COUNTY.

Stockton, where there were four harvesters of this pattern in use last year. The land is of such character that the harvester cannot be well handled with horses, but the splendid traction wheel, with its 54 inches width of bearing surface, moves it finely. When the picture was taken the machine was in grain badly down and going twenty-six sacks to the acre, and it was able to handle such heavy work easily, cutting a 25-foot swath and threshing and cleaning well. Under favorable conditions the machine can harvest sixty to seventy acres per day,

and can be operated at a cost of \$20 per day, including the wages of seven men and the coal or crude oil which is used for fuel.

The larger engraving shows the Best combined harvester on flat land, thousands of acres to the field, but it is adapted to other work also. The smaller picture shows it in operation in Umatilla county, Oregon, where it is seen going smoothly over the rolling land which is characteristic of the eastern part of that State.

Sugar Beet Seed.

The wide-awake local journals at the important beet sugar centers, Chino and Watsonville, are very properly calling attention to the fact that the strained commercial relations between Germany and the United States may endanger our supply of sugar beet seed, and that the only safeguard against trouble is to be no longer dependent upon foreign seed growers. We have often pointed out the fact that, wholly apart from any interference with the trade, there are sufficient reasons why the United States should develop a home supply. California has peerless adaptations for the seed product, as was recently quite fully outlined in these columns.

Why we should be selling trainloads of other seeds and buying trainloads of beet seed does not appear. There is certainly no natural difficulty about growing beet seed here; all that is necessary is to employ

the same exact methods in determining the quality of mother beets and handling them as intelligently as it is done abroad. On this subject the Chino *Champion* remarks:

"The very fact that we produce richer beets from the French and German seed than are produced in those countries from the same seed should be conclusive proof that the production of seed here would tend to breed the beets to a higher standard rather than to a lower one. Having the natural conditions to reach this result, it re-

mains but for a skilled application of scientific principles, with a reasonable amount of capital, to make a success here of this cognate branch of the sugar industry."

That a beginning has been made in this direction at Lehi and Watsonville factories is pointed out by the Watsonville *Pajaronian*. We are not sure that the sugar factories are the concerns best calculated to develop these supplies. In Europe it is done by professional seed growers. One of our largest seed-growing firms is working at this matter.

PACIFIC RURAL PRESS.

Office, Clark Building No. 330 Market St., San Francisco, Cal.
Telephone, Clay 204.

TWO DOLLARS PER YEAR IN ADVANCE.
Advertising rates made known on application.

Any subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

Registered at S. F. Postoffice as second-class mail matter.

ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, February 19, 1898.

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(New this issue.)

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The Week.

Weather and Crops.

Californians are still watching the clouds. The official weather summary on this page reviews the situation hopefully and leaves little else that need be said. A large amount of field work has been done and things brought into condition to realize as much as possible from late rains, which will save vast values if generous in amount. Orchard work, so far as pruning and cleansing are concerned, is well advanced, but there are large areas where the ground has not yet been moistened enough to plow well, while in other regions orchardists have had rain enough for present purposes.

The following data for the week ending 5 A. M. Wednesday, Feb. 16, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Last Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | .81 | 21.87 | 34.71 | 28.46 | 42 | 58 |
| Red Bluff..... | .04 | 9.26 | 19.62 | 17.17 | 42 | 76 |
| Sacramento..... | T | 6.84 | 13.63 | 13.21 | 44 | 72 |
| San Francisco..... | .01 | 5.86 | 17.00 | 15.74 | 44 | 70 |
| Fresno..... | .00 | 3.23 | 8.12 | 6.38 | 40 | 76 |
| San Luis Obispo..... | .00 | 4.11 | 11.42 | 10.30 | 40 | 86 |
| Los Angeles..... | .00 | 3.38 | 7.97 | 6.76 | 44 | 76 |
| San Diego..... | ... | 1.26 | 4.81 | 2.46 | 40 | 84 |

The Produce Market.

The most notable fact in the market history of the week is the sale of \$400,000 worth of dried fruits to German buyers, reported under another heading. Since the public announcement of this deal comes almost coincidentally with the RURAL'S going to press, we are not able to note in time for this issue its effect upon the general fruit situation. It would seem, however, that so considerable a transaction would be an important influence, if for no other reason than that it takes a large bulk of goods out of the stocks pressing upon the market. Independent of this sale, there has been little doing in the dried fruit trade. Some little movement of prunes goes on all the time, but not much to speak of in other lines. Eastern stocks are known to be light.

The local wheat market is steady at last week's price and shows hardly a trace of sympathy with the

agitations at Chicago consequent upon the great deal there.

Mill feeds are lower, due to heavy receipts from the north. Oats are steady. Barley is higher. Hay is steady.

In meats, the only change is a slight advance in hogs, but there is a strong undertone to mutton which promises an advance by the close of the month. Beef is steady. Butter, cheese and eggs are lower, due to causes usual at this time of year.

Generally speaking, the whole market situation is very uncertain on account of apprehensions as to the weather. If the usual spring rains come, all will be well, but as one bright, dry day glides into another, it is impossible to dispel the fear of a dry season. There seems, however, no reason to doubt that we shall not have the customary spring supply of moisture.

Great Sale of Dried Fruit.

Wednesday morning's San Francisco papers contained the following telegraphic item from Sacramento:

SACRAMENTO, February 15.—Heinrich Haas, who represents one of the largest mercantile houses in Hamburg, Germany, was in the city to-day, accompanied by C. C. Kinsey and J. G. Patton of the Johnson-Locke Mercantile Company of San Francisco. Mr. Haas has been in the State for some time for the purpose of contracting for California dried fruit products for the Hamburg firm he represents, and to-day closed a bargain with the Johnson-Locke Mercantile Company, by which it agreed to furnish for his Hamburg house during the year 1898 dried fruits, including prunes, peaches, apricots and raisins, to cost in excess of \$400,000, which Kinsey and Patton state is the largest sale of California products ever made in Europe. Hamburg, being a free port of entry, is a distributing center, and the fruit which goes there will be sent throughout Germany, Denmark and Norway and Sweden.

A RURAL writer called on Mr. Johnson of the Johnson-Locke Co. Wednesday afternoon, asking if the statement was true, and was assured that it was. The removal of so large a block of fruit from the general supply ought and no doubt will have an important effect upon the dried fruit situation. Incidentally, this sale is a fine thing, since the distribution of so great a quantity of California fruit in the German market cannot fail to widely advertise our products.

Free Market Convention.

The Free Market Convention to meet in San Francisco on the 23rd promises to be very largely representative of the interests and sentiment of the State. We hear of the appointment of delegates from pretty much all the districts directly tributary to San Francisco, and, unless signs fail, the attendance will reach several hundred persons.

Weather and Crops.

SUMMARY OF THE REPORT OF THE U. S. WEATHER SERVICE FOR THE WEEK ENDING FEBRUARY 15, 1898.

The rainfall is again deficient throughout the State. In the northern portion the rainfall is below the normal for the week by more than half an inch.

The temperature for the week has been above the normal; in some districts as much as 5 degrees. Except for the want of rain, the weather has been good for growing crops. In many sections farmers are irrigating. A good soaking rain would prove of the greatest value to crops of all kinds. The ground is already dry in some portions of the great inland valleys, and unless rain falls soon it will be too dry to plow. Already considerable anxiety prevails among those engaged in all lines of agricultural pursuits owing to the long continued deficiency in seasonal rainfall. While there is no pressing need of immediate rain, it must come soon or injury will result.

SHASTA.—Warm rain during week; crops doing well; prospects for heavy yield; pasture improving rapidly; seeding about completed.

TEHAMA.—Thunder and ball storm Monday; some damage to fruit buds. Weather favorable for all crops.

BUTTE.—Prospects for good fruit crop; grain fields look well; hillsides green. Pruning nearly over.

GLENN.—Farmers are busy plowing for summer fallow; growing grass is doing nicely. The ground will soon be too dry to plow.

SOLANO.—Flowering and harrowing in progress. Trees beginning to bud. If present weather continues the buds will come out rapidly.

SACRAMENTO.—Warm weather has started fruit buds. Crops growing nicely; general outlook encouraging.

YUBA.—Warm and favorable weather. Fruit buds advancing rapidly. Some plowing in progress.

SAN JOAQUIN.—Clear, warm weather, splendid for growing crops.

MERCED.—Ranch work progressing since the rain. Warm. Grain growing nicely.

STANISLAUS.—Warm and dry. Farmers still irrigating and hopeful. Light rains last week beneficial. Pruning finished.

KERN.—Welcome showers early in the week followed by good growing weather. Still plowing and seeding; feed and early sown grain coming up nicely.

KINGS.—Sufficient moisture in the ground for the present with regular spring rain. Outlook encouraging. Grain starting nicely since the rain.

FRESNO.—Warmer. Farmers still irrigating. Pruning finished. Good rains last week improved the prospects. Grain is growing, and plowing continues. Good crops if there is more rain.

TEHAMA.—Weather fine. Some grain still being sown. Excellent growing weather. Pruning and seeding about over.

SONOMA.—Grain and feed growing rapidly. Vineyard pruning nearly finished.

NAPA.—Rainy, cloudy weather, with some frost. Hay and grain doing well. Seeding finished. Pruning.

SANTA CRUZ.—Crops coming on nicely.

SAN MATEO.—Warmer. Peach and almond trees in bloom. Apricots budding; outlook good. Spring rains will insure good crops.

SANTA CLARA.—No damaging winds or frosts. Prospects of good crop of fruit and hay. Almond trees are beginning to blossom.

MONTEREY.—Crops all in good condition and growing nicely. Rain needed.

SAN LUIS OBISPO.—Very warm mornings. Grain and fruit prospects improving since the rains. Farmers are anxious for more rain.

SANTA BARBARA.—No rain during the week. Clear and pleasant.

LOS ANGELES (Bassett).—Light rain beginning of week makes grain look better. More rain needed. (Duarte).—Three-quarters of an inch of rain; favorable for citrus fruit. Resumed orange picking this week. (Fernando).—Light rain beginning of week. Grain all seeded. Orange crop looking well; free from frost. Rain needed. (Los Angeles).—Warm and fair. Crops of all kinds are looking well. Light rains at beginning of week of great benefit. More rain needed. (Palmdale).—Warm and clear. Still no rain and crop prospects unimproved. (Pomona).—Warm and dry.

VENTURA.—More rain needed. Oranges and lemons are being shipped quite freely. Vegetables plentiful. Live stock suffering for feed.

ORANGE.—No rain; farmers busy seeding. North winds.

SAN BERNARDINO.—Warm days, cool nights. Still shipping oranges. Rain badly needed in back country.

RIVERSIDE.—Warm. Movement of oranges still continues. Rain needed.

SAN DIEGO.—Rain is much needed, especially for the grain, which has just begun to show. Some anxiety is felt as to the supply of water for next season, the seasonal deficiency being considerable.

LOS ANGELES SUMMARY.—Recent rains were not sufficient for lasting benefit but effected temporary good. Ground is again dry and moisture is badly needed. Warm, fine weather now prevailing is good for oranges.

Official Report on Alaskan Agriculture.

The report of the commission appointed to investigate the agricultural and horticultural possibilities of Alaska has been published as House Doc. No. 160, 55th Congress, 2nd session. It contains much of general interest concerning the present agricultural conditions of that country and the possibilities of agricultural development. This commission, consisting of Hon. Benton Killin, a regent of the Oregon Agricultural College and Experiment Station, and Dr. Walter H. Evans, of Washington, spent the past summer in Alaska, visiting the southern coast region from Dixon entrance on the southeast to Unalaska on the southwest. Including side trips, the distance covered exceeded 3500 miles of travel by boat.

Trees and Forage Plants.—Much of the region visited is very mountainous, although there are many narrow valleys and tide flats of considerable extent. The southern coast region is naturally divided by the St. Elias and Fairweather mountains into two very characteristic regions. The southeastern portion of the country is heavily wooded, trees extending from tide water up the mountain sides 2000 feet or more. The most common and widely distributed forest tree is the Sitka spruce (*Picea sitchensis*). In some places trees of this species of great size were seen. Spruce logs approximating 100 feet in length and 4 or 5 feet in diameter are not uncommonly seen about the few sawmills in the Territory. Other valuable trees occur in considerable quantity, such as the red and yellow Alaskan cedars (*Thuja gigantea* and *Chamaecyparis nootkatensis*), the hemlocks and alders, with the birches and cottonwoods occurring rather abundantly in some localities.

The southwestern region, from Cook Inlet to Unalaska, is characterized by its wealth of grasses. *Poa pratensis*, *Deschampsia cespitosa*, *D. bottnica*, *Calamagrostis aleutica*, and *Hordeum boreale* are common species everywhere, while in the southeastern portion common timothy and orchard grass do very well. Nor are these the only fodder plants. White clover is spreading everywhere; red clover has apparently not been given a thorough trial, although the scattered plants seen were growing vigorously, and a native vetch is abundant in pasture lands and is said to be readily eaten by stock.

Cereals.—But little has been attempted with cereals so far as could be learned. Scattered plants of oats, barley and rye were seen that were headed on the last day of July. Wheat was matured at Sitka in 1896 and flax was in full bloom at the same place the first of September, 1897. Buckwheat is said to have been grown in the Cook Inlet region, although none was seen.

Village Gardens.—Nearly every village has a number of gardens in which, in spite of very indifferent cultivation between planting and harvest, potatoes, turnips, ruta-bagas, cabbages, cauliflowers, peas, carrots, radishes, lettuce, onions, etc., are grown. Specimens from Kadiak of what are supposed to be Beauty of Hebron potatoes weighing more than one pound each are now in Washington. Celery of excellent quality was grown at the same place the past season.

Some form of bedding the soil is practiced nearly everywhere, but the greatest evil is the tendency to crowding through planting too closely. Close planting seems nearly always the rule, and it results in such a complete shading of the ground that the sun's rays rarely or never strike the soil. Poor drainage is often an accompaniment of close planting, and with the rank growth of weeds it is no wonder that meager results are secured.

Small Fruits.—Alaska is pre-eminently a berry country. Wild strawberries, currants, raspberries, salmon berries, blueberries, huckleberries and cranberries abound, and, in addition, there are numerous

others of more local distribution. But little attempt has been made to domesticate any of them, although some strawberries, raspberries and currants were seen in a few gardens. A few plum trees have been planted, but they have not yet produced fruit. No attempt seems to have been made to graft any of the more hardy apples upon the native wild crab, although the latter is abundant throughout southeastern Alaska.

Live Stock and Hay.—The live stock industry is represented by a few horses, milch cows, beef cattle, pigs, chickens, and one small flock of sheep. On account of the limited supply of winter forage, stock is generally in very poor condition in the spring, but a few weeks' grazing upon the abundant and nutritious grasses puts the animals in good flesh.

A limited quantity of hay is made at various places, but the generally cloudy weather is thought to be very unfavorable to haymaking. With more care in cutting and handling the grass, a much greater amount of hay could be made, and if the methods of Iceland and some other portions of Europe, or those said to be adopted by the Hudson Bay Company, were followed, all the hay necessary could probably be made. In a few instances silos have been rather successfully employed, but as most of them were poorly constructed and not properly filled with grass, complaints were heard that the silage was so badly molded that stock would not eat it. Under proper conditions of ensiling this could probably be avoided.

Climate.—The climate of the coast region of southern Alaska, as shown by records kept by the Russians, as well as by the Weather Bureau, is a very moist, but not cold one. Zero weather is of short duration and -10° F. is seldom experienced. In the summer 75° to 80° F. is about the maximum. With such a temperature, plenty of moisture, and days of twenty hours or more of daylight, it is not strange that the vegetation makes such rank growth.

Yukon Valley.—The report also contains a brief preliminary report of Dr. Sheldon Jackson of the Bureau of Education on the agriculture of the Yukon valley, based upon his tour of that region the past season. Flourishing gardens were seen at Kose-refski and Anvik, 335 and 355 miles, respectively, from the mouth of the Yukon. Potatoes weighing more than a pound each, and turnips weighing ten pounds each, were seen at these places. At Circle City and Fort Cudahy good gardens are maintained by the commercial companies. Peas, beans, beets, radishes, lettuce and cabbage are grown at the two latter places. A vegetable garden has been established at Dawson, and a few miles below Circle City 3000 pounds of turnips were grown last year. Grasses and berries abound in the Yukon valley as in the coast regions.

Whether agriculture will flourish in Alaska as it has in the high latitudes of Europe only experimentation can determine, but it seems probable that with proper direction the local demands for many products can be fully supplied.

The Vine Hopper.

It is announced quite hopefully from Fresno that Horticultural Commissioner Rose of Sanger has found a dead shot for the vine hopper and of it Mr. Alexander Gorden is quoted as saying:

There is no doubt in the world but it kills those vine hoppers. It's the only thing in the world that will do it except an ax or a club. It is the first successful experiment I ever saw. It even kills those under the old leaves. After the experiment which was made at my place every one of the thrips was dead. It is worthy of a great deal of consideration and will be a boon to the vineyardists. It will be rather expensive, but expense is not a question with the vineyardists when their whole crop is in danger of destruction.

It is a little disappointing after this statement to read that the remedy is simply what is called "fumigation" at the south, viz: the vaporization of cyanide of potassium with sulphuric acid, and that to work it every vine has to be covered with a tent or barrel. It is of course no new discovery that hydrocyanic acid gas will kill vine hoppers. The use of it has probably occurred to every entomologist who has ever thought of the subject, and been dismissed on the reflection of the expense involved in covering the vines, either singly or in groups. More than this, what becomes of the hoppers which are not under the tent? We hope Mr. Rose's prescription will, however, succeed in face of all objections. We want something better than ax or a club, and we want it soon.

The Fresno Farmers' Club had this matter under consideration last week. The following interesting letter from Dr. I. S. Eshleman was read:

To the Farmers' Club:—The thrips that were covered with earth 3 inches deep—when they were hidden under leaves in the cool air of the early morning where the whole surface of the ground was submerged for twenty-four hours—were after three or four weeks found, some dead and others alive. The dead may have been dead when buried. Now, while many at least are as yet alive, surely they cannot live entombed all summer; and if they do, they can't damage the vines while underground. So we propose plowing all we can under, then irrigating the land, hoping to settle the ground sufficiently upon them so as to prevent them kicking their way out. Mr. Rose's application of the cyanide of potassium certainly almost instantly killed them. Such as we gathered deeply buried beneath the dead leaves and hotted remain after three days "perfectly dead." If this gas is not damaging to the foliage,

it will surely exterminate or reduce within safe numbers this atrocious pest.

I send you some grass just now (third day) taken from the ground which was under the vessel and among the dead leaves exposed to the cyanide gas mixture when the thrips were killed. You will see that the grass is slightly wilted compared with other grass. I also enclose you some that lay near by, but not exposed to the fumes.

It is possible and, indeed, probable that half the gas used in this experiment would be sufficient to destroy the thrips without injury to the tender grapevine foliage.

I. S. ESHLEMAN.

Discussion.—The members present were unanimous in the opinion that the vineyards should be thoroughly cleaned up, and the thrip, as far as possible, be plowed under. A resolution calling upon the farmers to do this was adopted. A second resolution was passed asking that the State University take immediate steps to send a man to Fresno county to examine into the thrip problem.

The Rose Remedy.—The formula introduced by Horticultural Commissioner Rose, consisting of two parts water, one part sulphuric acid and one part cyanide of potassium received the attention of the club. That this will kill the thrip is admitted by all who have used it. The cost is estimated at from \$3 to \$5 per acre. However, it is recognized that, unless the vineyards be thoroughly cleaned up, its use will avail little, for the thrips cover the ground and every weed and spear of grass in the vineyards.

AGRICULTURAL REVIEW.

CALIFORNIA.

Contra Costa.

The machinery taken from the old Crockett mill (now being made into a sugar factory) will be set up at South Vallejo by the McNears, to be operated in connection with their present plant, long known as the Starr mill.

Kings.

HANFORD, FEB. 14.—At a meeting of fruit growers and citizens to-day 1000 tons of fruit for canning purposes was guaranteed to Fontana & Co. and a site for their cannery to be built in Hanford was pledged the company. Fontana was present and accepted the guarantee and said that operations would begin at once to erect a plant to cost \$25,000. The cannery will employ between 500 and 600 persons during the canning season.

Los Angeles.

The Pasadena "onion factory" has advanced the price of its evaporated onions to \$1 per pound. Even at this price it is impossible to supply orders.

PRESIDENT VALENTINE of W. F. & Co. recently ordered 275 boxes of Highlands oranges for free distribution to such men as President McKinley, the Governors of States, the rulers of railroads, the heads of great papers, and others illustrious and powerful. Two boxes go to England, one of them to Minister Hay, another to the editor of the London *Statistician*, while other boxes go to other foreign countries.—Pomona Times.

Monterey.

MANY of the farmers in the Salinas valley who expected to plant beets are sowing their land to Chevalier barley. Last year not a few of them raised from twenty to thirty-five cents of Chevalier to the acre and sold it for \$1.25 to \$1.40 per cental.—Mercury.

C. P. BAILEY has large herds of Angora goats in Nevada where the animals do well on the white sage, which is the principal feed in winter time. His Nevada goat range is near Battle Mountain. Mr. Bailey says that the goats lose their teeth after browsing on the brush for five years, and have to be killed. At the Soledad ranch, in Monterey county, the teeth of the animals last fifteen years.—Salinas Index.

Napa.

MR. WETMORE ALARMED.—C. A. Wetmore, prominently associated with the wine interests of Stockton, declares that a serious proposition is confronting the wine growers of California. It is caused by the sale of 240,000 gallons of wine to the California Wine Association by the Anglo-Californian Bank. The last yearly output of wine for the State aggregated 26,000,000 gallons, and it was disposed of with difficulty at a fair price, but now that the syndicate dealers show a desire to cut prices Mr. Wetmore fears bankruptcy will follow.—Calistogan.

Orange.

HAY OUTLOOK.—Unless the situation shall be improved by a good rainfall, Orange county will suffer from hay famine. The article is already becoming scarce, and owners are not in a hurry to sell at any price. The light amount of rainfall since the first of the year has already put the price at a high figure, having advanced from \$10 to \$12 per ton during the past week, with every indication that it will go to \$15 before another week. In fact, one owner to-day placed the price on a lot he had at that price. Very little old hay is stored in the county, and the crop of last year was not very heavy. Farmers on the San Joaquin ranch, since they have planted their crops and are not working their horses, are using bean shucks and straw for feed.—Santa Ana Letter.

THE olive crop of Orange county this year is estimated at over one thousand barrels. At the Hewes ranch, north of Tustin, 700 barrels were put up, two-thirds of this amount being the fruit from one orchard, which is just coming into strong bearing, and the balance from the young orchard of James Irvine. San Juan Capistrano and Aliso canyon have also been large shipping points, and even Trahuca, twenty miles east of Santa Ana, in the mountains, where hillside orchards are just coming into bearing, is credited with a few barrels.—L. A. Times.

CO-OPERATION AGAIN.—There appears to be something of a revival of the co-operative spirit among deciduous fruit growers in the southern counties. The Santa Ana *Blade* reports that a co-operative agitation is on there, with the following purposes in view: First, to establish a uniform grade of canned and dried fruits of better quality than that handled heretofore; second, to market their own products in the Eastern cities and in Europe and thereby leave out the middleman, thus saving his profits to the producers themselves; third, to so regulate the shipments of all canned and dried fruits that there will be no glut in the market, and to supply the markets according to the demand for fruit; fourth, to obtain better railroad rates on all material shipped for use in the preparation of fruits, and on the shipment of fruit to the market. Organizations have already been formed in Los Angeles, Riverside and San Bernardino counties, and one was formed last week in Anaheim. Secretary White of the Santa Ana Chamber of Commerce has the matter in charge here. He is now endeavoring to secure the names of growers who will agree to become members of the association. As soon as the names of fifteen or twenty are secured a meeting

will be held to discuss the matter. General Organizer O. R. Sprague of Los Angeles will then make arrangements to meet the growers with a view to forming an association here which shall form a part of the central organization.

Riverside.

GREEN ORANGES.—An orange dealer in the East thus writes to F. J. Fogg of Perris, who gives out the letter for publication as a demonstration of the mischief of shipping unripe oranges early in the season: "Early in the season I bought a carload of Riverside oranges. I had heretofore handled Florida fruit, but determined to buy California. The result was disastrous. The fruit was very green. I haven't finished compromising and rebating on account of that car of fruit yet. My customers tried faithfully and hard to work it off at any old price, and in many instances failed almost wholly. I suppose you have fully ripe fruit now, but the California dog has got a hard name, and you might as well kill him for all of my customers. I fear I could not sell them—even your best fruit—at lowest prices."

San Benito.

SHEEPMEN in the vicinity of Panoche are having a serious time on account of the dryness of the season. They are feeding their sheep hay at \$20 a ton and Egyptian corn at \$20. The hay and corn supply is becoming exhausted, and as there is no feed on the West Side whatever they are moving their flocks to the mountains as rapidly as possible.—Hollister Bee.

San Bernardino.

THE GOPHERS HAVE FRIENDS AT COURT.—Within the past fortnight a petition has been quite generally circulated and signed in San Bernardino county, asking the Board of County Supervisors to offer a bounty on gopher scalps of "at least 2½ cents each." It was, however, turned down by the Board. Reporting the proceedings of the Supervisors, the San Bernardino *Sun* says: "The project met with but little favor, although it was probably the most numerous signed document of the kind ever presented before the Board. The only member who seemed to be in sympathy with the gopher-plundered citizens was Supervisor Cooley, but the balance of the Board seemed to think the raising of gophers was an industry that should be encouraged, and voted to that end."

THE San Bernardino County Board of Horticultural Commissioners reports for January as follows: "Owing to the cold weather during the past month, which brought the importing of nursery stock to a standstill, our work has been unusually light. We have found two more orchards infested with the red scale, one of which has been fumigated and the other will be attended to at once. San Jose scale is increasing and will be generally disinfected. Spraying is also in progress for black scale on deciduous trees. A few more orchards with white scale have been supplied with parasites. Fruit-picking hoxes have been fumigated. Orange huds from the red scale infested localities have been disinfected. Deciduous nursery trees from outside our county were inspected and those affected with root-knot or other troubles condemned and destroyed."

FARMERS' CLUB AT HIGHLAND.—The fruit growers of the Highland district have recently organized a Farmers' Club, with a membership of over fifty. Meetings are held in the afternoon of the last Monday in each month. The programme for the next one, Feb. 28th, will be in the nature of a question box on the orange. Anyone anywhere having one or more questions concerning any phase of orange culture is requested to send them to the chairman of the Programme Committee, W. M. Bristol, East Highlands. As fast as received they will be published in various papers, together with a request that anyone having either a definite or hypothetical answer to one or more of them will send such answers to the above address. The reading of these queries and replies will constitute the chief feature of the meeting on the 28th, and later the catechism will be published, due credit being given to each contributor.

San Luis Obispo.

SUGAR BEET SEED.—The McClure Seed Co. will plant fifty acres of beets this season; and if the percentage is high enough, the whole crop will be harvested for the seed. Sugar factories are increasing so rapidly that it is becoming a question of where the seed is to come from to supply the demand. It has already been demonstrated that we can raise beets richer in the saccharine matter than Europe, and it is only a question of time when we may be supplying Europe with seed.—Arroyo Grande Herald.

San Joaquin.

STOCKTON, Feb. 10.—The wild geese are remaining along the sloughs and rivers so long this year that they have become a dangerous pest. They are nipping the young wheat to a great extent, and the farmers are becoming so alarmed that they are soaking wheat in strychnine and throwing it over the fields. Dead geese are laying around in profusion, but for every one killed ten more seem to come.

Santa Barbara.

BEETS VS. BEANS.—The bean acreage threatens to be almost wiped off the map in the northern part of this county the coming season owing to the new sugar beet industry. The matter of growing beets in that section had been thoroughly tested years ago and is no experiment. A large percentage of the valley lands north of the range is admirably adapted to beets, and after this year the capacity of the new factory will have to be at least doubled to accommodate the product.—Lompoc Record.

PEOPLE who have waste places on their lands are missing a great deal by not planting the blue gum for future fuel supply. The day is coming very speedily when southern California will be denuded of the native woods which have taken centuries to produce. The gum will make more wood in ten years than the oak in 100.—Independent.

Santa Clara.

THE "San Jose" scale is a misnomer. It was transported from Europe to Tasmania; from there it found its way on nursery stock to Santa Clara valley; from here it has spread throughout the East, and finally it has returned to Europe, where it originated, having circled the globe and created havoc along its entire path. But it has succumbed to orchardists in this State, and it will easily yield to similar methods elsewhere.—San Jose Mercury.

Santa Cruz.

ALL the beet pulp at the Watsonville factory has been purchased by Henry Miller and will be used to feed his vast herds of cattle. The sale of the exclusive right to take the pulp from the factory to Miller has cut off several parties in this county who had contracted for a carload each week for next six weeks. These parties have been notified that the pulp supply is exhausted.—Hollister Bee.

Solano.

NO CHARGE FOR DIVERTING CARS.—Last summer the railroads made a charge of \$2.50 for every car of fruit that was diverted from the destination originally intended. A big "kick" was made by the deciduous shippers at the time, and when the citrus fruit shippers began to start this season's crop they joined in. The result has been that the charge has been remitted. The change took place on February 1st, and applies to all classes of shipments. This will be quite a saving to shippers, as many cars were diverted during the season, and some several times before reaching their destination.—Vacaville Reporter.

HOTCHKISS & MILLER, the well-known cannerymen of So-

noma county, have taken an interest in the Suisun cannery, and it will be operated in connection with their other plants.

Sonoma.

SANTA ROSA, February 10.—One million six hundred thousand gallons of wine were transferred to the Wine Makers' Corporation here to-day. Those disposing of the wine are the Italian-Swiss Colony, red wine, 550,000 gallons; Swiss Colony, dry white wines, 150,000 gallons; Miller & Hotchkiss, dry red, 475,000; dry white, 25,000; H. B. Chase, 270,000 red, 30,000 white; E. A. Reiners, 60,000 dry red, 40,000 white; Cloverdale Wine Company, 95,000 dry red, 5,000 white.

Tulare.

CROPS AND POLITICS.—The farmers have about finished farming, having put in every available acre of land to grain. So, if we are blessed with occasional spring rains, this locality will add another notch to McKinley's prosperity. If it turns dry, we will just have to take chances, which is bad for the Republicans looking for a county office this fall, as it is hard to talk prosperity with no crop.—Porterville Enterprise.

WAR ON CODLIN MOTH.—The Horticultural Commissioners of Tulare county give notice that trees infested with codlin moth "must be eradicated." "It will be found," says the board, "that it will save money, besides the satisfaction of having clean fruit. This pest is becoming so bad, is being so widely scattered throughout the county, and so much wormy fruit is coming into market, that the commissioners have decided to enforce the law and have all such orchards cleaned up. The persons neglecting to do so are liable to have their fruit quarantined and condemned when they bring it to market."

SALT hush is a tower of strength at the culture station now, bringing stock through in good shape. It is not quite so delicate a feed as bright hay and crushed barley, but it keeps animals in good condition and they eat it as if glad to get it. There are a few thousand acres in Tulare county, which might as well be growing salt hush as alkali weeds.—Register.

Bogus Farm Journals.

(Editorial article in the San Jose Mercury.)

The Redlands *Citrograph* has performed an admirable service for the farmers and fruit and vegetable growers of that section, by exposing the character of a self-styled farm and garden publication that is a fair specimen of many others published in the East which are endeavoring to obtain a foothold in this State under false pretenses. This particular "journal" has sixteen pages, its subscription price is only 50 cents a year, and the publisher offers to send it to any prepaid subscriber up to January 1, 1901, for 50 cents, the regular price for one year. Its cheapness commends it to many who do not stop to consider whether it is of any value or not.

How this "farm journal" can be published for 50 cents a year is explained by the *Citrograph*. It is poorly printed on the cheapest quality of news paper. The "literary" portion of the paper is veriest trash and hack work, most of it mere clippings, and not good clippings either. Its "agricultural" features are worthless. There are thirty-two advertisements of fake and quack medicines and doctors. That is one item. There are nine advertisements of fake jewelry, such as gold rings for 10 cents, genuine diamond (mineral) rings, watches for 95 cents, and such like. That's another item. There are beauty restorers, and "How to Get Rich," and "8 to \$10 a Day Easily Made" advertisements. That's more items. These fakes and swindles can afford to pay money for ads., and these fake papers would be glad to send them free in order to find one sucker out of a hundred papers sold. That's how it is done.

There are dozens of such "farm journals" soliciting subscriptions in this State, all fakes and frauds. Then there are several Eastern farm journals which are legitimate publications and of value in the particular sections in which they are published. But for all practical purposes they are as worthless for the California farmer, or grower of fruit, berries or vegetables, as those which are absolute fakes. Not a single condition in this State is similar to any existing in the East. About the first thing an Eastern farmer has to do when he comes to California and buys a farm or orchard land is to unlearn everything that his Eastern experience has taught him. We have several kinds of soil; we have numerous kinds of climate, and not one of them resembles any climate in the East. Our seasons are unlike those of the East. Seed time and harvest are different. There is scarcely a single item pertaining to soil, climate, seasons, cultivation, planting and the care of grains, fruits and vegetables that corresponds with any in the East.

All Eastern rules fail in California. Hence it is that all Eastern publications devoted to the farm, horticulture, garden, poultry, or even stock raising, are of no value whatever to the California farmer. What he requires, and what he should never be without, is a farm or fruit journal which is published in this State and devoted to the interests of the farmer in this particular field. Such journals as the *RURAL PRESS* and the *California Fruit Grower* are invaluable to the farmers, horticulturists and viti-culturists of this State. In addition, every person who owns or leases a farm, or orchard, or vineyard, or who grows vegetables or berries, should be a constant and careful reader of his own representative home paper, which supplies information concerning his industry during the year which he cannot afford to do without. The farmer who subscribes for and reads some first-class California farm journal and his local paper is always well informed concerning his special business, both generally and locally; he is always learning something about it that is advantageous to him; he keeps track of the markets, and he prospers, while his neighbor, who makes no attempt to keep posted, fails to make both ends meet.

HORTICULTURE.

Orchard Work in Capay Valley.

By J. F. DEARING at the University Farmers' Institute at Guinda.

Cultivation of Orchards.—Great pains should be taken in the cultivation of orchards. A double object is attained by keeping the surface of the soil well pulverized: First, the weeds (which draw heavily upon the vitality of the soil, which should be devoted to tree and fruit growth) should be destroyed, while they are young and tender, by plowing in the fall or early winter after they have all started to grow, and the fertilizing qualities which they would extract from the soil are left for the benefit of the growing fruit. Second, it prevents the rapid evaporation of the moisture of the soil. A neglected orchard, thickly covered with weeds, costs the owner twice as much to get the land in shape in the spring as it would had he plowed it in the fall. In my opinion, plowing should not exceed four inches deep in the fall or early winter, from the fact that weeds sprout and grow from the immediate surface to as great a depth as four inches, while if the land is plowed deeper, it turns fresh seeds which have been preserved in the ground up to the sun and they immediately start to grow. If land is not plowed until March or April, as is the custom in our section, the heavy growth of weeds makes the land lifeless and cloddy and hard to pulverize. The following is the rule I observe: I commence plowing as soon as the vegetation has thoroughly started. I plow to one row and from the other, three and one-half or four inches deep. I do not harrow the land until I commence the last cultivation in the spring. By not harrowing the land, if there should come a heavy rain it is less apt to run together. I let it lie undisturbed till about the 20th of April or immediately after what I think is the last heavy rain. Then I start the harrow and harrow it as quickly as possible while the land is pliable and mellow. After doing this I can plow until the middle of June, if necessary, as it will not dry out after being harrowed. Then I plow again as deeply as I can, throwing the land to the trees that were uncovered at the first plowing. Then I harrow the land twice. Should the land be cloddy use a corrugated iron roller, followed by a cultivator, when the surface will be pulverized fine enough. I usually finish the latter part of May; and I think it is very important to run a cultivator or heavy harrow over the land about the latter part of June, especially for the benefit of late fruit.

Irrigation.—Irrigation is a matter that must depend wholly upon the character of the soil to be irrigated. All lands, no matter where situated, that have subterranean drainage must, in my opinion, be irrigated thoroughly and frequently, and careful cultivation should follow each period of irrigation. The amount of water to be applied is as follows: To each tree, or square of twenty feet, 750 gallons or a depth of about three inches each time, at intervals of about four weeks, commencing about the 20th of June and ending about the middle of August. This is for late fruit, and I think it is of the greatest importance that the early fruit trees should be irrigated after the fruit is gathered, in order to thoroughly develop the buds for the coming or following season, especially apricots. Lands that have a hardpan or clay bottom, which renders the retention of the moisture within the reach of the roots of the trees, needs no irrigation, except in some of the southern counties where rainfall is very light. Non-irrigated fruit, where satisfactory quality can be obtained without water, has a higher color, is firmer, has better keeping qualities, flavor, etc., and sells better in the Eastern markets, and dries more heavily than irrigated fruit.

Pruning.—Plum, prune and pear trees are treated under one subject, as one rule applies to all. At the time of planting cut back to twelve inches; allow three or four buds to grow at the top, and the terminal buds below pinch back after they have grown two or three inches, so they will throw out leaves to afford shade for the stalk the first year. Young trees should be shaded with stiff paper or tule wrapping the first year, but the covering should not be allowed to touch the bark of the young tree. The following year cut back to twelve inches and leave three shoots, and the second pruning leave five to six branches and cut back to twenty inches or two feet. The third year leave about ten limbs and cut back from two and one-half to three feet. Afterwards take up the rule of pruning or cutting back and thinning out every other year. This rule I have followed, first, for the purpose of economizing or curtailing the expense of pruning; second, it takes two-year-old wood to bear fruit, and on old trees that bear heavily the growth is not very vigorous, and it really is not long enough to cut back, or even large enough. By letting it grow two seasons the work of thinning and cutting back and the taking off of the brush comes under one operation and costs hardly more than if but one year's growth was handled.

[Mr. Dearing's interesting paper provoked some

discussion. Some held it better to plow later and turn under green growth rather than to plow early and prevent it. It was also held better to plow once and depend upon the non-turning cultivator in the spring and summer. Mr. Dearing's remarks on irrigation are intended to apply only to the different lands in the Capay valley. In most situations the deep soil may go without irrigation and shallow soil over an impervious layer may badly need it. In Capay valley the deep soil seems to have sand or gravel below, which permits too free escape of water, while bench land holds moisture better. As for pruning, Capay fruit growers differ from each other about as widely and cordially as do fruit growers elsewhere, and Mr. Dearing's practice drew out much discussion.—Ed.]

ENTOMOLOGICAL.

What can be Done With the Woolly Aphis.

Now that apple planting is very popular in suitable localities in California, it is important to pay more attention to the woolly aphis. Prof. M. V. Slingerland gives the *Rural New Yorker* a very interesting outline of the present state of knowledge on the subject.

On Root and Branch.—The well-known woolly aphis of the apple works both on the branches and underground upon the roots. Those lice which work above ground rarely do very serious injury; but in the West and South, especially, the root-inhabiting form often works great injury to young orchards. Those lice on the branches will readily succumb to two or three thorough applications of kerosene emulsion or a strong whale-oil soap wash. Until recently few, if any, careful experiments have been conducted against the woolly aphids working on the roots. The Missouri Experiment Station has recently published some valuable and successful experiments in combating the pest, both on nursery stock and on bearing trees. The conclusions are that, in all cases, it is advisable to thoroughly drench the roots of apple stock bearing any suspicious, knotty swellings on the roots in a strong kerosene emulsion, by placing them in the mixture for at least a minute in order to kill what lice may be on the roots before setting the trees. It would be a good scheme to dip the whole tree so as to kill any of the lice that might occur on the branches. It has been demonstrated that the branch form may migrate to the roots, where it then becomes the root form, the two forms thus being identical, and migrating from root to branch and vice versa.

Tobacco Dust.—When it is being planted, each young tree should have a liberal supply (a pound) of tobacco dust placed about and over the roots and close up to the body and a little earth covered over this tobacco. Then every spring, just as soon as settled warm weather appears, each tree should receive a pound or two of the dust, applied by first removing the earth from around the trunk of the tree for a distance of about two feet and to a depth of four to six inches. Distribute the tobacco evenly over this area and replace the earth. The tobacco dust will leach down with every rain and more or less saturate the earth about the apple tree with nicotine, which will not only kill every aphis that may be there, but it will prevent others from entering, and, at the same time, act as a good fertilizer to the tree.

In the Missouri experiments badly infested ten-year-old bearing apple trees were, apparently, freed from all the root lice by applying, as described above, from two and one-half to five pounds of tobacco dust twice in one season (June 29th and August 15th). As the dust can be obtained for about one cent a pound in large quantities, the cost of the treatment is comparatively small. Only the dust will answer; the stems will not do. It is to be hoped that this simple treatment will prove equally effectual in other parts of the country. Give the dust a thorough trial.

Carbon Bisulphide.—Carbon bisulphide was also used in the Missouri experiments, and with much success. A McGowen injector, modified for use in an orchard, was used, and a fluid ounce of the liquid was injected to a depth of six inches to a foot into each of two or three holes made two feet away from the trunk on different sides of the tree. This amount applied in this way apparently killed all the root lice on young bearing trees and did not injure the trees. When applied close to the trunk of the tree, in many cases the trees were badly injured or killed. The liquid must not be allowed to come into contact with the roots. After it vaporizes, which takes place very quickly, it will not injure the roots. The liquid can be used only when the soil is dry; for, when wet, the fumes will not penetrate far.

Tobacco Dust Preferred.—The tobacco dust is recommended in preference to the bisulphide, because

the former is more lasting in its effects. While the bisulphide kills the lice in a shorter time, it remains in the soil for only a short time, and thus would not prevent the restocking of the roots from the branch form of the pest. The tobacco dust works slower, but kills, and remains in the soil to prevent other colonies of the lice from forming on the roots. In extreme cases, where bearing trees are badly infested, it may be well to kill the lice immediately with the bisulphide, and then apply the tobacco dust a little later to prevent the insect from getting a foothold on the roots for a long time. Wherever the branch form occurs in conspicuous woolly patches on the branches, it should be destroyed with kerosene emulsion or whale-oil soap, for individuals of this form may migrate at any time to the roots and start colonies there.

THE POULTRY YARD.

Poultry Schools.

The study of poultry is becoming quite common in Europe and is being taken up in this country. In England the work has already obtained a good footing. It is carried on in a variety of ways, the most important of which is the county councils, similar to our farmers' institutes in some particulars. Of course, at these councils poultry is only one of the branches taught. But as they are arranged in weekly classes, it gives the instructors a better chance to impress the principles of the science. In France there is a school devoted entirely to the teaching of poultry culture and kindred branches.

An American Poultry School.—The Rhode Island College of Agriculture is developing a poultry plant, with the intention of teaching the principles and practice of poultry culture. This subject will be made a regular part of the instruction in agriculture. They propose, as a beginning, to offer a special short course of four weeks the present winter if the demand for such instruction warrants it. They realize that a complete and perfect poultry school cannot be created in one year or two years. They are, however, making a beginning. If the movement receives good support it will be pushed until this department becomes the leading special branch of agricultural instruction at the college. The proposed short course in poultry culture the present winter is hence to be, in one sense, an experiment, and will determine, firstly, whether there is a large demand for instruction in this line; secondly, it will show wherein our equipment for this purpose is adequate and along what lines it can best be further developed for educational purposes; thirdly, it will enable the college to ascertain who are heartily in favor of this plan of poultry education and who will lend their influence and good-will to pushing the same to success; fourthly, it will bring teachers and such experts as can be secured to participate in this work together, and test their capabilities for teaching the subject. The aim will be, in this first short course, to teach the fundamental principles of poultry farming, and to give opportunity for practice and training in the actual operations of the poultry business. A person taking the course will learn the theory and science of poultry culture, and gain such experience in the work of running the different parts of the poultry plant as will give a sure indication of his own fitness or unfitness for the business, and install into his mind a comprehension of the essentials of success.

Eggs Preserved in Clay.

Li Hung Chang's commissariat carried with it around the world a supply of Chinese preserved eggs for the ambassador's special use. "Those wonderful eggs," said my friend, Mr. Doyle, the steward of Waldorf, at which Li stopped during his sojourn in New York, "are not so bad after all. Here is one of them," he said to me, knowing that I would be interested in it, showing me what looked like a pumice stone, but was an egg encased in clay, which was given him by one of the cooks and may be a century old for aught I know. This is a preserved hen's egg. This is the way it is done: First the eggs are boiled hard; then, while they are hot, they are wrapped in soft clay and packed away. They keep forever. They were brought here in bags packed in rice husk, some of which still clings to the clay. These eggs are almost black, and the yolks are green. They chop them very fine and decorate most of their viands with them, and they enter largely into all their sauces. The duck eggs are from the Pekin and Muscovy breeds. They are first boiled, then preserved in a paste of charcoal, which hardens about them. These duck eggs are opened, split in halves and served in the shell, and, as old as the eggs are, I assure you that they are delicious."

SACRAMENTO COUNTY has subscribed \$3000, Santa Cruz \$2000 and Santa Clara is planning to raise \$2000, all for the purpose of extending the market for California dried fruits. These enterprising counties should not be left to act alone and bear the whole burden of expense.

SHEEP AND WOOL.

Notes On Angoras.

L. A. Masters, an Angora grower near Roseburg, Oregon, gives the *Review* some interesting notes on goats in answer to inquiries addressed to him. Angoras shear from five to six pounds of mohair yearly. Common goats usually shear about three pounds.

What is Kemp in Mohair?—Kemp is coarse hair that has no strength to it, and is always in mohair that is grown from goats that are not well bred. Kempy mohair never brings so good a price. Common hair goats, such as they have in Mexico and other places, have nothing but hair (or kemp) on them. When they are bred into the Angoras, this kemp gradually leaves them as they are bred up. A goat breeder that understands breeding can breed this kemp entirely out.

Longevity.—How long will a nannie goat live and how many kids do they have yearly? They usually live to be about fifteen years old. A thoroughbred Angora hardly ever has more than one kid, while a common goat very often has twins.

What Kind of Cure Should a Goat Have?—They should be kept in a brushy pasture, with shed or barn to come to in bad weather. A dry place for them to sleep at night is almost absolutely necessary, as they will not do well without it. It is also a good plan to have a little hay or straw for them when it is exceedingly bad weather, but as a rule goat breeders never calculate to feed goats at all. I have seen goats that have lived the year round without hay, grain or grass and did well. This barn or shed ought to have a fence around it so as to keep the goats up at night, especially where coyotes are plentiful, also to keep the kids in while young. The kids should be kept up and given almost the same care one would give a calf until they are about two months old. If they are left run with the old ones while young, they sometimes hide away and go to sleep and sleep all day long, and when the flock of old ones come home the little one is lost. It is not unusual to lose them in this way.

How Can You Clear Brush Land With Goats?—Simply by cutting the brush off the land and let the goats do the sprouting. It is claimed that one goat will keep the sprouts from growing on one acre of oak grubs. I believe this to be true although I have never tried it. If this be true what is a goat worth to a man who has a place covered with oak grubs? I will leave that for the readers to figure out. There have been different ones ask me where they could buy cheap goats. I have been told that a man can buy all the common goats he would want in California at a very low figure. In conclusion I will say: About all the expense there is in raising goats in this brushy country of ours is a good fence and a shelter for them at night.

Goats for the Klondike.—It appears that from 2000 to 3000 Angora goats will be driven into the Klondike-Alaska region next year. Some sanguine schemers expect to use them as pack animals on the journey and still have them in good condition for butchering when they get through.

Mohair in England.

The Bradford correspondent of the *American Wool and Cotton Reporter*, wrote under date of Jan. 1st, 1898: "Business in mohair is at the present moment the one bright side in the Bradford trade, and shows signs of being in a healthy condition for some time to come. The remarkable failure of the year, so far as mohair is concerned, has been very slight fluctuation in the value of raw material in face of the very large consumption. Never before was there such a large business done with so little variation in prices. In a great measure this unusual circumstance is no doubt accounted for by the ample supply of raw material, and chiefly by the entire absence of speculation, the business done being purely legitimate from beginning to end. The Turkey clip proved to be a very disappointing one, being of poor color and rather off in quality, but, on the other hand, the clip of Cape firsts was very good, not only in color but somewhat longer in staple than usual, which was gratifying to dealers, as it showed that the growers in South Africa are making an effort to comply with the requests made to them from Bradford in regard to this matter. The demand throughout the year has been mostly for quality and the greatest rise has been in mohair of the finest description."

The Coyote Problem in Oregon.

At the meeting of the Grant County Wool Growers' Association at Canyon City, last week, the secretary reported that during the year he received from assessments on sheep, at $\frac{1}{2}$ cent per head, \$439.75, and paid into the county treasury, as the

Association's share of the money to be paid out in bounties for scalps of wild animals, \$103.25.

President C. Johnson stated that the bounties paid for the scalps of wild animals that prey on sheep were entirely too small to induce men to make a business to kill them, though about 800 scalps were brought in during the past year. He stated that there were about 200,000 sheep in Grant county at the present time, and at the most conservative estimate $5\frac{1}{2}$ per cent, or 5000 head, are killed every year by coyotes and cougars. At the present prices, he said, the 5000 sheep that are annually killed in Grant county alone would sell for enough, if expended for two consecutive years in bounties of \$2.50 per scalp, to nearly, if not entirely exterminate all animals that prey on sheep, and thereby make the sheep business a pleasant and profitable one.

Parties who are engaged in feeding stock say coyotes were never so numerous since the settlement of the valley than at present. They are seen in large numbers, sometimes fifteen or twenty in a band, and sheepmen are kept constantly on the alert to prevent losses in their flocks, but even with their vigilance their losses are great. An effort is made to have the bounty on coyote scalps increased to a sufficient sum to make it an inducement for parties to hunt the pests and thus rid the country of them.

THE FIELD.

Suggestions on Hop Growing.

Prof. R. H. McDowell, Agriculturist of the Nevada Experiment Station at Reno, has just published a very interesting bulletin on hop growing. The Station results in experimental hop growing are encouraging and Prof. McDowell places before Nevada readers a very well prepared outline of the methods employed in different parts of the country. As to California, he has excellent points prepared by Daniel Flint and F. V. Flint of Sacramento. The advice to growers with which the bulletin closes is very pertinent:

1. At the present price of hops don't begin hop culture without fully considering what the venture means in every detail.

2. With high prices don't erect buildings and largely or entirely give up your present farm programme without thoroughly looking the ground over and deciding in advance what you propose to do, provided that the price of hops goes down to five cents or less per pound.

3. If hop culture has been a specialty with you for years and you have on hand the necessary apparatus and buildings for culture and curing, also have at your command years of experience in marketing the crop, be slow to change this business, to which you have given so much thought and energy, because of a few years' depression in prices or partial failure of the crop; but remember that in the past these very topics of discouragement have in many instances lessened competition by causing growers, who perhaps lacked in resolution, to abandon their specialty for something that seems, for the time being, to be more paying till a closer acquaintance reveals its undesirable realities.

AGRICULTURAL ENGINEER.

Wide and Narrow Tires.

As less than two years remain before the time (Jan. 1, 1900) when, according to the law of 1897, all heavy wagons used in California must have wide tires, it is becoming that our people should be reminded of the fact and what there is to be gained by the new arrangement. Of course, the prime consideration in the minds of the law makers was the wide tire as a road preserver. We believe this claim has never been negated. Another consideration entirely is the comparative draft of narrow and wide tires under different conditions of the roadbed, and it is important that demonstrations of that fact should be widely published. The Missouri Experiment Station has made a large number of experiments during the past two years with the draft of broad and narrow-tired wagons. These tests have been made with the ordinary narrow-tired wheels and with 6-inch tires, on macadam streets, gravel and dirt roads in all conditions, on meadows, pasture, stubble and plowed fields, both wet and dry. Bulletin No. 39 of the station, by Director H. J. Waters, gives the results of these tests. It is fully illustrated and will be sent free to all who write for it to Director Waters, Columbia, Mo.

Summary of Results.—The draft has been determined by means of a self-recording dynamometer. The net load was in every trial the same, viz., 2000 pounds. Contrary to public expectation, in a large majority of cases the draft was materially less when tires 6 inches in width were used than when the

tests were made with tires of standard width—1½ inches. The following is a summary of the results:

I.—On macadam street, as an average of the two trials made, a load of 2518 pounds could have been hauled on the broad tires with the same draft that a load of 2000 pounds required on the narrow tires.

II.—Gravel road. In all conditions of the gravel road, except wet and sloppy on top, the draft of the broad-tired wagon was very much less than that on the narrow-tired wagon. Averaging the six trials, a load of 2482 pounds could be hauled on the broad tires with the same draft required for a load of 2000 pounds on the narrow tires.

III.—Dirt roads. (a) When dry, hard and free from ruts and dust, 2530 pounds could have been hauled on the broad tires with the same draft required for 2000 pounds on the narrow tires.

(b) When the surface was covered with 2 or 3 inches of very dry, loose dust, the results were unfavorable to the broad tire. The dust on the road in each of these trials was unusually deep.

(c) On clay road, muddy and sticky on the surface and firm underneath, the results were uniformly unfavorable to the broad tires.

(d) On clay road, with mud deep, and drying on top, or dry on top and spongy underneath, a large number of tests showed uniformly favorable to the broad tire. The difference amounted to from 52 to 61 per cent, or about 3200 pounds could have been hauled on the broad tires with the same draft required to draw 2000 pounds on the narrow tires. In this condition of road the broad tires show to their greatest advantage. As the road dries and becomes firmer, the difference between the draft of the broad and narrow tires gradually diminishes until it reaches about 25 to 30 per cent on dry, hard, smooth dirt, gravel or macadam road, in favor of the broad tire. On the other hand, as the mud becomes softer and deeper, the difference between the draft of the two types of wagons rapidly diminishes until the condition is reached when the mud adheres to both sets of wheels; here the advantage on the broad tires ceases entirely, and the narrow tires pull materially lighter.

(e) Clay road, surface dry, with deep ruts cut by the narrow tires in the ordinary use of the road. In every trial the first run of the broad tire over the narrow tire ruts has shown a materially increased draft when compared with that of the narrow tire run in its own rut. The second run of the broad tires in the same track where the rut is not deep completely eliminated the disadvantage, and showed a lighter draft for the broad tire than the narrow tire showed in the first run. Where the ruts were 8 inches deep, with rigid walls, three runs of the broad tire in its own track over the ruts were required to eliminate the disadvantage. Three runs of the broad tire over this track have in all cases been sufficient, however, to so improve the road surface that both the broad and narrow-tired wagons passed over this road with less draft than the narrow tires did in the original ruts. In addition to the saving of draft, the road was made very much more comfortable and pleasant for the users of light vehicles and pleasure carriages by the few runs of the 6-inch tire.

Summing up all the tests on dirt roads, it appears that there are but three conditions on which the broad tires draw heavier than the narrow ones, viz.: First, when the road is sloppy, muddy or sticky on the surface and firm or hard underneath; second, when the surface is covered with a very deep loose dust and hard underneath; third, when the mud is very deep and so sticky that it adheres to the wheels of both kinds of wagons. It appears that the dust must be extraordinarily deep to show a higher draft for the broad than for the narrow tires. The three conditions just named, therefore, are somewhat unusual and of comparatively short duration. Through a majority of days in the year, and at times when the dirt roads are most used and when their use is most imperative, the broad-tired wagons pull materially lighter than the narrow-tired wagons.

IV.—A large number of tests on meadows, pastures, stubble land, corn ground, and plowed ground in every condition, from dry, hard and firm to very wet and soft, show without a single exception a large difference in draft in favor of the broad tires. This difference ranged from 17 to 120 per cent.

V.—It appears that 6 inches is the best width of tire for a combination farm and road wagon, and that both axles should be the same length, so that the front and hind wheels will run in the same track.

TOBACCO GROWING AND CURING

Professor Whitney's Views on Tobacco Problems.

Californians are keenly interested in any measures which seem to be in the direction of demonstrating what it is necessary to do to produce satisfactorily tobacco in this State. Experiments have been pushed with greater or less zeal for a quarter of a century; a vast amount of money has been expended in profitless enterprises, and though some recent efforts

seem to have approached nearer to satisfactory results than did the earlier trials, there are still disappointment and failure to discourage producers. The experts do not give encouragement that the problems involved are at all easy of solution. There was a meeting of tobacco growers held in Florida late last month. In Florida there is the same doubt as to proper methods, although the growers seem to be nearer success than we are in California. At this meeting an address was made by Prof. Milton Whitney of the U. S. Department of Agriculture, in the course of which he gave suggestions of what he considers the difficulties to be overcome and the way efforts should be made in that direction. Perhaps an outline of these may suggest to our readers new ideas of the nature of the problems involved.

Local Characters.—In his address, as reported in the *Florida Agriculturist*, Prof. Whitney said that the same tobacco grows in all southern countries; in Sumatra, in Cuba, in Florida, in Texas, Mexico and southern California. Then the cigar tobacco area skips over our intermediate States and is found again in Massachusetts, Ohio, Pennsylvania and Wisconsin. In the intermediate States the tobacco is unfit for cigars; it is very strong and entirely unsuited for our domestic market.

At the present time tobacco has been highly specialized. Only a few types come up to the customary value. It is more widely distributed than wheat and corn, and can be grown where neither wheat nor corn can be profitably produced. It is only the tobacco that fills certain demands which has any merchantable value.

Specialization has gone so far that the type of cigar tobacco used for different purposes comes from certain limited localities. A cigar suited for our domestic needs is made up from three different States: The filling is produced in Pennsylvania or Ohio, the binder is grown in Wisconsin and the wrapper comes from the valley of the Nutmeg State.

Reasons for Diversity.—Speaking of the difference in soil and climate, Prof. Whitney said: We are unable to see any reason from the meteorological data of any difference. What the difference is we have not discovered. In the soil we find more marked conditions. Tobacco soil of the Connecticut valley is different from the soils of Pennsylvania and Ohio. The Connecticut valley soil is a light alluvial, sandy soil bordering the Connecticut valley. The Burley tobacco is confined to a certain soil formation in Ohio and Kentucky. The bright yellow tobacco of Virginia and North Carolina is always grown on a certain type of soil, and so well marked is the influence of soil upon tobacco that we are ready now to map the soils of those great tobacco districts. In Florida this question is much more difficult. Science is not yet able to predict where tobacco can be grown, except as we see the result of practical experience and as we extend that into new fields.

Unwise Requests.—There have been a good many requests from Texas and Florida and California for help from prospective tobacco growers. They frequently ask for what will not be of the greatest use to them. One of the most common requests that comes to the department is to employ an expert and send him over the State to instruct the farmers how to grow tobacco and how to cure it.

What is Needed.—There is a wide and important field of work connected with the tobacco industry which covers the points I make. The Sumatra and Cuba districts have the condition of climate, if not of soil, and that they can produce a superior article there is no question about it. What the tobacco grower wants to do is to find out what it is that gives the foreigners the advantage over us in the tobacco industry. Pennsylvania and Connecticut are trying their very best to produce a tobacco equal to the Cuban and Sumatra. I think the Government should send agents abroad to make a thorough and exhaustive study of the soil, the climate and cultural conditions in those foreign countries.

The Cuban who comes here and uses Cuban methods finds that he does not, with exceptional instances in your own State, make as fine a tobacco as he makes in Cuba.

Local Differences in Cuba and Sumatra.—We find that upon the small island of Cuba the area in tobacco is almost insignificant; it covers a small part of the island. Further than that, we get our domestic tobacco from certain localities, as we demand our Cuban tobacco from certain of the aforesaid localities in Cuba. Even in Sumatra our supply of tobacco comes from small areas. Only 5 per cent of the tobacco produced in Sumatra is adapted to our markets. It is a well known fact that the tobacco grown in the eastern part of Sumatra is not adapted to our market and goes to foreign countries. So, you see, in Cuba and Sumatra they have insurmountable obstacles to produce tobacco suited for our markets.

That matter should be studied; the conditions upon which they produce their best tobacco, and the conditions against which they, with all their skill, are unable to combat. We must study their failures, the areas where, under the same climate, apparently, or under the same soil, they are unable to produce the type of tobacco which we want to grow.

This line of work none of the States can take up,

and it is proper that the national government should aid you in it.

Local Types of Tobacco.—The Government can do more for the tobacco grower than this. We have Cubans here who understand the production of tobacco under the conditions existing in their own country. They find the conditions here different. Investigations should be instituted and carried on looking to a modification of our tobacco.

I believe it is feasible to breed up a type of tobacco that we want and will be suitable to our conditions, as it is to breed a particular kind of stock, as it is to breed a trotting horse, milk cow or beef animal, which is seen every day. There is hardly one of our special crops but what has been vastly improved by high breeding.

You want investigations into the hybridization, so as to get just the plant you want, coupled with investigations of the soils where such plants are indigenous, if such exist. I do not think you could do this yourselves. It would take a special line of work, men specially trained for that, just as we have men specially trained for breeding animals.

You also need an investigation of the changes that go on in the growing of tobacco. Very little is now known about the changes that go on in the growing and curing of tobacco. We know that it is a bacteria similar to the fermentation of wines. You want to learn what kinds are valuable and what kinds are harmful.

Growing and Curing.—Now, it has been suggested that it might be possible to separate these germs and make what you call pure cultures of them and apply them to the bulk when it is to be put down for fermentation. When you put your tobacco down in bulk you know that in a few days some change has taken place. To learn what these changes are I think you ought to have a bacteriologist in the experimental establishment to investigate the changes that go on during the fermentation. I do not know what the results will be, but I do think we ought to investigate the matter, so as to put all the power into your hands—all the control that can be exercised by you and be valuable for your use. We ought to have our bacteriologist go to Cuba and study the curing process there. I do not know that it is, but it is possible. We ought to have a bacteriologist in the Cuban shed to study methods and work this problem out, then come here and in Connecticut and see what the conditions are in these respective places, and the chances are that he can give you a much more intelligent system in the curing process than you have at present.

Seed.—There is another line that would be of commercial value. The department is entirely unable to secure a genuine seed of any particular grade from Cuba or Sumatra. We have tried this, but have not been successful. You want a particular kind of seed, and we have not been able to obtain it. If we had agents in these countries investigating these matters it would give us an opportunity of securing really valuable seeds for the people of this country. Then the true value of the seeds of the department would be established and could be relied on. This could be done by an intelligent agent of this country who was sent over for that or for other purposes.

How to Get Help.—I have no doubt, if the Florida tobacco growers request it, some arrangement can be made whereby this work can be carried out. If you really want it, it seems to me that you will have a bond of union with the Northern tobacco growers; that the Northern associations will unite with you in making any requests which you desire to make towards obtaining this benefit from the national government.

Advice of a Sonoma County Grower.

D. Hetzel of Santa Rosa has a tobacco plantation near Guerneville, which was recently visited by a representative of the *Santa Rosa Republican*. The soil of the place is low-lying, deep, moist, rich sandy loam. Encircling hills shut off high winds, and altogether the location and constituency of the soil are similar to nearly all the hop lands in the county, and resemble greatly the condition of corn-producing farms. Mr. Hetzel has experimented with tobacco for many years, but only the past season or two has he met with complete success, because of the fact that methods had to be changed from those in practice in other tobacco producing sections, owing to different conditions. Mr. Hetzel's experience has taught him to proceed in the following manner:

Growing the Plants.—Use only Havana seed; if you cannot procure it elsewhere, I will supply it. Plant the seed the last of February or the first of March in a bed of rich soil about 3 feet wide. The bed should be encircled with boards projecting 8 to 12 inches above the surface of the ground. Protect the young plants from the sun, frost and wind by a frame covered with cheese cloth which is laid over the bed, resting on the projecting boards. Keep this on so long as there is danger of cold weather, but no longer, as it tends to make the plants less hardy.

Planting Out.—Prepare the field by deep plow-

ing and pulverizing. In two months after seed sowing transplanting may be done. Set the plants out like cabbage in rows from 3½ to 4 feet apart and 2½ feet in the row. This will permit of about 6000 plants to the acre.

Irrigation is not necessary even at the time of planting; but if the weather is hot, place a tuft of grass over each plant at the time it is set out, which protects it from the sun and draws moisture during the night. After a few days remove the grass, and a week later loosen the ground around each plant with a hoe. No weeds should be allowed to spring up; cultivate often and carefully. Prune the plants when they are knee-high by stripping off the lower leaves, thus throwing the strength toward the top.

When the buds begin to form, top the plants by breaking them off, so that only twelve or fourteen leaves remain.

A few plants may be allowed to blossom, for the peculiarity of tobacco culture in Sonoma county is that the seed does not deteriorate or lose its individuality, but may be allowed to reproduce itself for several seasons.

Harvesting.—On good soil the tobacco will mature in two and a half months. When the leaves color, the plant should be cut off. Hang the plants tops downward on poles having projecting nails 6 inches apart. When a pole is full carry it to the curing shed. This building should be tightly closed during the day and left open at night so that the damp air at night will assist in the curing process. Leave the tobacco in the curing shed until the leaves all turn nicely brown and the leaf stems lose their moisture. Then strip off the leaves and sort them according to size, shape and quality. Pack them in cases or bales for sweating. This process should be carried on in a closed place where there is uniformity of temperature.

If the plants are set out early enough a second crop will ensue. Shoots will spring up from the roots. All but one of these shoots should be destroyed. The second-crop leaves will not be so large or well-shaped as the first, but make excellent fillers and binders.

It must be understood that tobacco culture means hard work with hands and brains, especial care being necessary during the curing process; but if this work be well done, the profits will be amply remunerative. Mr. Hetzel is a cigar manufacturer and has made up his tobacco and submitted the cigars to critics, who are loud in their praise.



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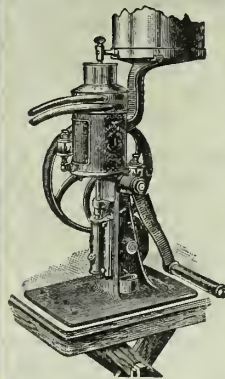
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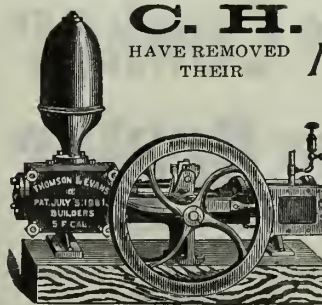
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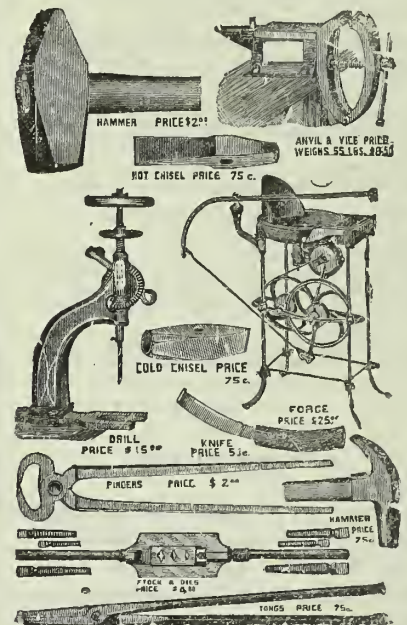
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THE HOME CIRCLE.

What the Lambs Say.

Said the little shepherdess,
"Many wise folks cannot guess
What the lambs say when they cry,
Or what the old sheep do reply."

Can you tell? I asked. "Oh, yes!"
Said the little shepherdess:
"All the young lambs say, 'Ma-a! Ma-a!'
All the old sheep answer, 'Ba-a!'"

"If a stranger comes this way,
Or the young ones, in their play,
From their tender mothers stray,
And go searching all around
Every stone and bushy mound,
Then the young lambs cry, 'Ma-a! Ma-a!'
But their mothers answer, 'Ba-a!'
Just to shame them when they cry,—
Silly lambs to be so shy!"

—Edith M. Thomas.

At Threescore and Ten.

Men told me, Lord, it was a vale of tears
Where thou hast placed me, wickedness and woe

My twain companions whereso I might go;
That I through ten and threescore weary years
Should stumble on, beset by pains and fears,
Fierce conflict round me, passions hot within,
Enjoyment brief and fatal, but in sin.
When all was ended, then should I demand
Full compensation from thine austere hand;
For 't is thy pleasure, all temptation past,
To be not just, but generous at last.

Lord, here am I, my threescore years and ten
All counted to the full: I've fought thy fight,
Crossed thy dark valleys, sealed thy rocks'
harsh height,
Borne all the hurdens thou dost lay on men,
With hand unsparing, threescore years and ten.

Before thee now I make my claim, O Lord.
What shall I pray thee as a meet reward?

I ask for nothing: let the balance fall.
All that I am or know or may confess
But swells the weight of mine indebtedness.
Burdens and sorrows stand transfigured all:
Thy hand's rude buffet turns to a caress;
For love, with all the rest, thou gavest me
here,
And love is heaven's very atmosphere.
Lo, I have dwelt with the Lord. Let me die.
I could no more through all eternity.

—David Starr Jordan.

A Postal Episode.

It was a pretty sight, this Cell 29, as Katherine Gray called her parlor and alcove suite in the Norman, Cedar street, Blank City. There was a piano; there were books, easy chairs, pictures. Besides the furnishings that in these days are called necessary, there were the countless small things that make a room something more than mere shelter. In the open grate the gas-log burned with irritating regularity and precision, flaunting its beauty in the face of the useful but ornamental steam-coil. Behind a gray screen, slightly ajar, there was a tiny gas-stove, and singing kettle; a half-open door of a cabinet revealed odd pieces of china and shining silver.

This is what the sun shone upon through the big east bay window on New Year's morning. This and Katherine Gray at her breakfast table. The postman had made his one round for the day. Some business house had sent her a calendar, and there was one letter. This she was reading. She made a pretty picture as she sat thus. The domestic signs and symbols were becoming to her; they gave her an air of homeliness that made one wish for a cup of the fragrant coffee, just for the sake of seeing her pour it out.

She had a wealth of brown hair, sincere hazel eyes, and a most expressive mouth. She was tall, slow of motion and of speech. No one would have spoken of her as a pretty woman; yet, any observing person would have seen that she had not stopped at prettiness, but had passed on to something finer.

With all the rest of the world, she was having a holiday. So she had arrayed herself in a becoming house-gown, and was enjoying it just as much as though she was not, every day in the year—Sundays and holidays excepted—engaged in the real estate and life insurance business.

"I wish," she said—she had a fashion of thinking aloud when alone—"I wish that this letter could have been delayed until to-morrow. I don't like being disturbed on New Year's Day. There is

a saying that, as the first day goes, so goes the whole year."

Then she laughed, and she looked very pretty when laughing.

"I wonder if I'm to have a proposal of marriage every day in the year, and feel as bad about every one as I do about this?"

Then she arose and walked to the mirror. The reflection was not unpleasant; she smiled as she looked at it. But she said: "There's no use in being flattered by the glass, Katherine; the fact remains that this is your birthday and that you are thirty-four years old to-day, and from this time right along you are not going to grow any younger. Here in your hands is an offer of marriage from an eminently worthy and respectable man, who would take you away from Cell 29 and its 'kitchen-parlor' air, and set you in a handsome home, where you wouldn't have to hide your bread in the bureau drawer, bake and boil in a single dish, or eat 'boughten pie'—who would make a lady of leisure of you, and who, best of all, or what ought to be best of all, would love you and be good to you. And yet," she continued, "you hesitate. With the lines coming around your eyes and mouth, with work and worry and weariness stretching out indefinitely before you—you hesitate; I am surprised. You don't show your usual good business sense, your keen appreciation of a good bargain. You are ungrateful, also. You ought to fall on your knees and thank the Lord for such a piece of good fortune. That is, I suppose you ought, according to the world's way of looking at such things."

Then she sat down before the fire and fell into silence. Truly, she was not insensible to the material advantages that were offered to her in this letter from Mr. Browne, wholesale grocer and dealer in canned goods. She loved ease and beauty and luxury; she could use them to the adorning of any position that might be offered her. She was tired of work and the continuous struggle for bread. She had achieved some success in a business way, and that, too, in the face of every instinct of her being. She had made something approaching a home in this little suite of rooms. Her friends drifted in of a Sunday, or now and then of an evening, and, sipping tea from a dainty cup, would pronounce it all "so cosy and delightful." It certainly was a great improvement on the gregariousness of the boarding-house, but in Katherine's secret soul she felt it to be a narrow and lonely life. She despised the make-shifts of light housekeeping, and being of a very social nature, she often found her solitary roll and coffee lacking in flavor.

As she sat thus, with her hands clasped above her head, she thought: "If it were not for the letter received and answered ten years ago to-day—the first of the year is a fateful day to me, surely—I know what my reply would be to this one. If I could only forget, but I may as well start my life anew to-day as any time."

Then she went to her desk and took down the old calendar. "You've had your day, and you may as well go with the rest. One nail drives out another. Your successor is here with his ready-made wisdom. By the way, I'll see what sort this is," she said. "It's some advertising scheme, no doubt; but it may have a message for me just the same."

She read: "Be more afraid of the companionship that enslaves than of the solitude that leaves you free. Use the Highflyer bicycle. Best in the world."

She read the quotation twice, smiling as she did so, and hung the new calendar in its place. Then she proceeded to set her rooms in order. She cleared the little table, and cheerfully put the bread and butter in such places as the ordinary housekeeper knows not of. She sang as she washed the dainty plate and cup and saucer. She did not mind that there was only one.

After this she proceeded to do what nine out of ten business women do on their holidays. She took numberless stitches here and there; she "did up" a bit of lace too fine for the aggressive

laundress' hands; she regulated sundry boxes and drawers, and set in fair array her store of feminine finery.

At three o'clock she made a careful street toilet and went out for her dinner. Determined not to dine alone, she invited little Joe, the newsboy who brought her morning paper, and who did small errands for her and other occupants of the Norman, to go with her.

To be sure, when she asked him if he had been to dinner, he admitted that he had been "wid de gang to de mission. But dat," said he, "don't cut any figger. I kin eat jes' as well fer all dat."

He verified his assertion. Katherine never had a more satisfactory guest.

"Yer bet it was bully," he said the next day to a properly envious crowd of boys. "None o' you fellers ever seed anything like it. 'Twas a way-up restrent, where dey have chany wid flowers onto it, an' silver an' glass things wot I don't know der names of. An' wite table cloths an' napkins wot I used jes' like a genlem does, an' a waiter wot stood behind my cheer an' waited on me jes' like he did the rest. He didn't das do nothink else wid Miss Gray's eyes lookin' right at him. An' dare was soup, an' turkey, an' inguns, an' jelly, an' ice cream, an' pie, an' pudding—an' I was on'y sorry I'd filled up so at de mission."

Katherine sat in the early winter twilight at her piano, singing some sweet old song of her early youth.

She loved music, and not even the demands of her real estate and insurance business had kept her from study and practice.

Then there came a vigorous ring at her door. It flashed across her mind that possibly Mr. Browne was going to forestall the postman and know his fate by word of mouth. Before going to the door, she lighted the gas and went to the mirror. Standing there she said, "Statistics show, Katherine that woman over thirty—"

Then the bell rang again. As if wavering a little, she glanced at the calendar. Bravely the words shown before her eyes: "Be more afraid of the companionship that enslaves than of the solitude that leaves you free."

"Ah! that helps," she said.

Then she opened wide the door. It certainly was not Mr. Browne who stood there. Mr. Browne was short and rotund; florid also. This man was tall; of fine proportions, with clear-cut features and a fine mustache.

"Miss Gray?" he said, interrogatively.

"Yes."

"My name is—but perhaps you remember my name;" and the tall man stepped uninvited into the room.

"Yes," she said her eyes blazing; "I remember your name. It is the name of the only man who ever treated me with disrespect. Go back into the

silence that has covered you for ten years!"

"Not yet," he said. "The morning mail brought me this letter that you wrote me ten years ago. You accepted me then; you said that you loved me. I've proof in my hands," and he opened a letter yellow and stained. "You say:—"

"Dear Everil—I—"

"Oh, don't," she cried.

"Listen, dear," he said; "sit down beside me while I tell you. The post-office in the city where we both lived ten years ago has recently undergone repairs. A package of letters has been exhumed by the gasfitters or plumbers. This is one of them. I only hope the others have been forwarded to as happy a destination. For the words in that letter—they are true now as then; are they not, Katherine?"

"Oh, I don't know," she said.

"Find out, dear, as quickly as you can. The years have been long and hard; but these last eight hours have been torture. I had no idea where to look for you—"

"What do you think I must have endured?" she asked.

"I don't dare think of it." Then he added, as ninety-nine men out of a hundred would have done: "We won't talk about it or think of it. We will forget the sadness of the past and plan for our future."

"How did you find me?" asked Katherine.

"I saw you at the restaurant where you were entertaining that little hoodlum. I knew you at once. There's no woman in the world like you. I, too, had a guest with me, and could not follow you. But an hour later I caught the boy on the street and by my silvery eloquence and a dollar learned your name and where you lived."

"My name!"

"Yes. You might have changed it—and then—I should not be here."

Then Katherine told him of her father's death; of the reverses that drove her into earning her own livelihood; of the circumstances that set her in the business she was following; of her modest success; and then of Mr. Browne.

"That is all past," he said, emphatically, "especially Mr. Browne. You are going to retire from business and let me set you in the dearest, sweetest spot on earth—a happy home. I don't fancy this spirit of independence that possesses the women of the present day."

But Katherine said: "Don't talk of a subject you evidently do not fully understand. It's too large for our discussion to-night. It was this spirit of independence that made it possible for me to be true to my own heart for so many years. Except for it, I might not have been able to obey the message the New Year brought to me. This has been New Year's Day, you know."

"This is New Year's Day," he said.

THE GRANITE STATE

Feed Cooker and... Water Heater

The lightest, most convenient and most Economical Farm Boiler

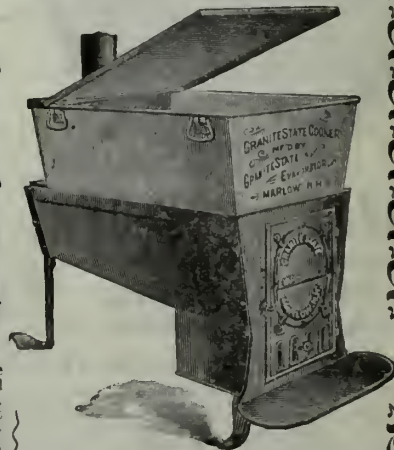
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The Boiler is made of galvanized steel. The Furnace sides and linings are of sheet steel plates. Front, door and hearth of cast iron. There is no reason why this cooker should not last a lifetime. The boiler can be used for heating water and cooking all kinds of food for hogs, cattle, dogs and poultry; and with an extra boiler, for preserving fruits, vegetables, boiling cider, making apple jelly, and many other purposes for which a large cooking utensil is desired. Made in 7 sizes: 25 gallon, \$12; 50 gallon, \$17; 100 gallon, \$24. Send for circulars containing full description and testimonials.

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We publish a book, "Cooking Food for Stock," which we will send free if you mention this publication when you write.

GRANITE STATE EVAPORATOR CO.
6 Temple Court, New York



50 gal. size, 56 inches high, weighs 150 lbs.

Guaranteed just as represented in the illustration or money will be refunded. Hundreds sold. No complaints.

GENTLEMEN:—I have used the Granite State Feed Cooker every day since I received it, cooking food for from three to four hundred fowls, and it has always worked perfectly, the grate and ash-pit giving it a perfect draft. The whole thing shows good judgment and mechanical skill in plan and manufacture.

Yours truly, WM. E. COGGERSHALL.
Newport P. O., R. I., June 18th, 1897.

"It shall be, God helping, the beginning of love, and hope, and happiness that shall last the years to come. It shall be the beginning of companionship that means not enslavement, but the liberty wherewith love sets us free. And as for that blessed calendar, it shall never be deposed."

So they sealed their vows after the sweet manner of lovers since the world was.

Then some friends dropped in, and after a while Katherine lighted the tiny gas stove behind the gay screen, and soon there was a singing kettle and a dainty little feast, which the friends pronounced "just lovely," but which Katherine and her lover alone knew was the feast of betrothal.

A month later little Joe was dividing a box of wedding cake with a number of his friends.

"Dey looked as happy as kings and queens," he said, "when dey rode away. An' I don't s'pose 'twould ever have happened if it hadn't been for me."

Popular Science.

If, after eating pure food, fresh outdoor air is breathed, the blood will show a large increase in red corpuscles, but by drinking stimulants, the red disks are decreased in serious proportions.

In 1877 Falcon Island, in the Friendly group, began as a smoking shoal; ten years later it was a volcanic island about three hundred feet high and over one and one-half miles long. Now it is disappearing.

Capt. Parry speaks of the great distance that sounds can be heard during intense cold. "We often," he says, "in the Arctic regions heard people converse in a common voice at the distance of a mile."

Bourrier, after a series of experiments, has come to the conclusion that fresh meat in a room filled with smoke of tobacco absorbs nicotine readily, and may under circumstances become so tainted as to lead to digestive disorders.

The temperature of the sun's surface has been measured and determined to be between 12,000° and 20,000° F. The most accurate determinations of the sun's temperature, made by Wilson and Gray, in Ireland, place it as 14,000° F.

Greenwich Observatory claims that it has little clear weather, sun and stars are wholly invisible every other day in winter, one day in four in fall, one in eight in spring and one in sixteen in summer. In the twenty years ending with 1896, there were only eight instances of sunlight for fourteen continuous hours.

Gems of Thought.

Dost thou love life? Then do not squander time, for that is the stuff life is made of.—Franklin.

As for opportunities, we can make a heroic life out of whatever is set before us to work with or upon.—Anna Robertson Brown.

Man's life is a book of history; the leaves thereof are the days; the letters, mercies closely joined; the title is God's praise.—Masson.

Love is the fusing element of all life; the tremulous, softly defined horizon line that at once separates and unites the spheres, terminating our human vision; the trusting-place where earth and heaven meet.—Lucy Larcom.

Life is made up, not of great sacrifices and duties, but of little things, in which smiles and kindness and little services cheerfully rendered are what win and preserve the heart and secure comfort.—Sir Humphrey Davy.

Without Macbeth lamp-chimneys, you throw away money and comfort. But get the right one for your lamp.

The Index free.

Write Macbeth Pittsburgh Pa

Fashion Notes.

Silver passementerie is a favorite material for belts and band trimmings. Some of the newest sash belts are of black silk net, edged with a fringe of jet.

Velvet is a favorite material for theater hats, and the most stylish trimmings are ostrich or fancy feathers arranged in a kind of fan at one side. Imitation stones in buckles, buttons and other ornaments are seen on all the hats.

The newest buttons are shown in three distinct sizes for the jacket, skirt and bodice. Many of the smaller buttons are veritable jewels in their artistic beauty of color and design, and many are set, like actual gems, in low mountings of cut steel and silver or pure gold. Jet, opal, plumb-colored enamel and old bronze buttons set in riveted points, framing dainty miniatures, medallions, etc., are familiar styles, but many of the expensive jet and cord passementeries have buttons to match, which are not intended to have any strain upon them, but merely finish strap ends, mock buttonholes on skirt fronts, etc. When used upon the bodice, they are generally fastened on the outside, or very often in the center of handsome jewel trimmings *en applique*, the bodice closing with strong hooks and eyes set upon a fly underneath.

Crêpes and alpacas will be seen for spring wear. Combinations of wool and mohair will be also in great evidence, and many effects will be shown, epingles, cashmeres, traverse weaves, frises, cheviots and foule. Matelasse in small check and serpentine designs promises to be especially popular.

Yokes and guimpes of every shape, color and fabric are in fashion. Besides being a very dressy addition to the toilette, they are most useful in transforming a half-low, rounding or pompadour bodice into one appropriate for any daytime dress occasion.

Crimped gauzes, giving the effect of fancifully drawn materials, will be much used for making evening gowns next season. Stamped gauzes are also seen, Indian and pompadour designs being the favorites. The newest mousseline de soie shows a peculiarly petty gloss, looking almost like satin.

Red, in geranium shades, will be fashionable for spring wear. Begonia, coquelicot, geranium and coral are all lovely tones, and there is an exceedingly rich, dark red, called poupre. Watermelon pink, now known as laurier, and rose pink will be in high favor. A rich, purplish red is called fuchsia, and four cherry tints are known as reine, roi, bengale and jacqueminot. In yellow there is and immense variety of shades. Bled'or epis, paille, regent, coq de Roche and favorite are among the deeper orange tones.

The latest thing in hats is a toque of white broadtail trimmed with white feathers. The low, broad effect in arranging the trimming on all hats is the novelty in midwinter millinery. High, one-sided decorations are out of date.

White suede gloves are the thing for afternoon and evening wear, and white suede slippers are worn for dancing.

Tucking is one of the latest fads in dressmaking. Silk waists are made tucked all over with the finest pin tuck sewed by hand. Some of the exclusive houses do not allow an inch of machine stitching in their work, the necessary seams being turned in and caught together with buttonhole stitch.

Mrs. Peck: Have you forgotten, Henry, that you used to say, before we were married, that you would be willing to die for me? H. Peck (in a fit of desperation): Oh, Maria, how I wish you had taken me at my word and put me to the test!—Cleveland Leader.

The lady: Can you match this piece of ribbon? The gent: No, lady. You may remember that it was one of the matchless bargains we ran last Monday.—Indianapolis Journal.

DOMESTIC ECONOMY.

Cooking Apples.

Nine Ways to Prepare the Most Wholesome of Fruit.

Steamed Apples.—For steaming, good-sized, tart red apples are chosen; slit the skin slightly from the stem end; stand the apples in a steamer and steam quickly for twenty minutes. Serve hot with whipped cream.

Dinner Apples.—For dinner apples, core and slice without paring four good-sized, tart apples. Arrange them in a baking dish; add a quarter of a cup of water and sprinkle over four tablespoonfuls of sugar. Bake in a quick oven twenty minutes and serve in the dish in which they were baked.

Apple Float.—The third way is called apple float. Beat the whites of three eggs to a stiff froth; add three tablespoonfuls of powdered sugar and beat again. Then stir in gradually one good-sized, tart apple, grated, a teaspoonful of yellow rind of a lemon; heap this spoonful over a dish of cream and serve cold.

Fried Apples.—To begin with, core and pare good-sized apples. Cut them into slices crosswise. Dip them into a batter the same as used for bouchees; drop them into smoking hot fat and serve with powdered sugar.

Apple Fritters.—For apple fritters beat two eggs without separating; add a half cup of milk and two-thirds of a cup of flour. Stir into this two good-sized apples, chopped fine; add a teaspoonful of baking powder; drop by spoonfuls into smoking hot fat. Serve with powdered sugar.

Ginger Apples.—Select four good-sized apples; pare, core and cut into quarters. Stand them in a saucepan, add a half cup of sugar, an ounce of ginger, cut into slices, a clipping of the yellow rind of lemon and one pint of water. Cover the saucepan, and stand over a moderate fire until the apples are perfectly tender. Dish them; boil down the syrup, and baste it over the apples. Serve with or without whipped cream.

Scalloped Apples.—Cut into slices sufficient stale bread to make a pint. Slice three good-sized apples; put a layer of bread in the bottom of the baking dish, then a layer of apples, and so continue till the dish is full, the last layer being apples. Put one tablespoonful of molasses into a quarter of a cup of water, baste it carefully over the bread, sprinkle over a little cinnamon and two tablespoonfuls of sugar; bake in a moderately quick oven twenty minutes; serve with hard sauce.

Apples a la Zauve.—Blanch twenty-four almonds and chop them rather fine. Put in a double boiler and half pint of milk; beat the yolks of four eggs with four tablespoonfuls of sugar; stir

into the hot milk, and take from the fire. Add the almonds, a teaspoonful of vanilla, a tablespoonful of black coffee, a tablespoonful of butter, and then add a pound of apples that have been pared and grated. Turn into a baking dish, and bake in a moderate oven for thirty minutes. Heap the whites of the eggs, thoroughly beaten, over the top, brown slightly, and set away to cool. Add the vanilla after taking from the fire; otherwise the flavor loses.

Apple Slump.—Pare and core six good-sized apples; cut them into quarters; put them in a saucepan and cover with cold water; add two bay leaves, and simmer gently until the apples are nearly tender. Put into bowl one pint of flour, add a rounding teaspoonful of baking powder, mix thoroughly, and add sufficient milk to moisten. Roll this out and cut into biscuits; stand them over the top of the apples; cover the saucepan and cook for fifteen minutes; serve with hard sauce.

Hints to Housekeepers.

Ordinary headaches almost always yield to the simultaneous application of hot water to the feet and back of the neck.

Where vegetables are to be served alone, select the most perfect of their kind. The less sightly ones may be used for stewing, soups or seasonings.

If you wish to be hygienic use olive oil or good cotton seed oil for frying. If this seems extravagant, use lard or dripping, of which, if you use much meat, you should have an abundant supply.

A strip of flannel or a soft napkin, folded lengthwise and dipped in hot water and wrung out, and then applied around the neck of a child that has the croup, will surely bring relief in a few minutes.

Some one advises that the stringy coat left on bananas after they are peeled should be removed before eating. It is this, like the white, pithy underskin of an orange, which is indigestible.

If a piece of rare beefsteak is left over from breakfast, it makes an excellent sandwich filling for luncheon if chopped very fine and seasoned with salt and pepper. In this condition it is much more digestible than when reheated in the universally detested stew.

Housekeepers who cook dried fruit properly prepare it by washing it thoroughly, letting it soak in cold water until all dirt or sediment has been loosened and washed off, then rinse it thoroughly and put it to soak for twenty-four hours in clear water. Cook it slowly and not very long in the water in which it has been soaked. This process brings out the real fresh-fruit flavor better than any other.

"THAT TERROR of MOTHERS."

How it was overcome by a
Nova Scotian mother

Who is well known as an author.

Of all the evils that attack children scarcely any other is more dreaded than croup. It so often comes in the night. The danger is so great. The climax is so sudden. It is no wonder that Mrs. W. J. Dickson (better known under her pen name of "Stanford Eveleth") calls it "the terror of mothers." Nor is it any wonder that she writes in terms of praise and gratitude for the relief which she has found both from her own anxieties, and for her children's ailments, in Dr. J. C. Ayer's Cherry Pectoral.

"Memory does not recall the time when Dr. Ayer's Cherry Pectoral was not used in our family, for throat and lung troubles. That terror of mothers—the startling, croupy cough—never alarmed me, so long as I had a bottle of Ayer's Cherry Pectoral in the house to supplement the hot-water bath. When suffering with whooping cough, in its worst form, and articulation was impossible on account of the choking, my children would point and gesticulate toward the bottle; for experience had taught them that relief was in its contents."—Mrs. W. J. Dickson ("Stanford Eveleth"), author of "Romance of the Provinces," Truro, N. S.

C. J. Wooldridge, Wortham, Tex., writes: "One of my children had croup. One night I was startled by the child's hard breathing, and on going to it found it strangling. It had nearly ceased to breathe. Having a part of a bottle of Dr. Ayer's Cherry Pectoral in the house, I gave the child three doses, at short intervals, and anxiously waited results. From the moment the Pectoral was given the child's breathing grew easier, and in a short time it was sleeping quietly and breathing naturally. The child is alive and well to-day, and I do not hesitate to say that Ayer's Cherry Pectoral saved its life."—C. J. WOOLDRIDGE, Wortham, Tex.

These statements make argument in favor of this remedy unnecessary. It is a family medicine that no home should be without. It is just as efficacious in bronchitis, asthma, whooping cough, and all other varieties of coughs, as it is in croup. To put it within everyone's reach, Dr. Ayer's Cherry Pectoral is now put up in half size bottles, at half price—50 cents. Send for Ayer's Curebook (free) and read of other cures effected by Dr. Ayer's Cherry Pectoral. Address the J. C. Ayer Co., Lowell, Mass.

Four Thousand Words a Minute.

Prof. Crehore of Dartmouth College last week read before the Franklin Institute a report to the Postmaster General of experiments made in England last summer by himself and Lieut. G. O. Squier, U. S. A., with the synchronograph, a recent invention for the rapid transmission of intelligence by the alternating current. According to the report, the experiments were successful, and, it is thought, will effect a revolution in telegraphy and telephony. The idea of the synchronograph originated in 1895, when Prof. Crehore used the alternating current in an unperfected state at Dartmouth College and sent and received words at the rate of 800 a minute. Since then machines have been perfected that will send and record 4000 words a minute. The result of the experiment made shows that the use of the alternating electromotive force, which rises gradually from zero to a maximum and then falls again to zero as gradually, is the best kind of wave for use on actual lines with disturbed capacities. The substitution of the synchronograph for the Wheatstone transmitter on identical lines, using the same receiver in each instance, showed a speed of operation by the synchronograph about three-fold faster, provided the mechanical limit of the receiver was not already reached.

The causes of this great increase of speed are differences in the waves which pass through the receiver; since the only way by which the identical receiver can distinguish between transmitters is by differences in the actual waves received. The waves of current passing through the receiver, which control its operation, are not of the same shape as the electro-motive force waves of the transmitter. The current waves received from the synchronograph are not true sine waves in the receiver, even though the electro-motive force is truly harmonic, but the frequency is the same as that of the generator, and the waves are of equal length. The current waves from an alternator may approximate a sine wave very closely if the electro-motive force is harmonic, and, in fact, if there is no leakage on the line it will be truly harmonic; or under some circumstances it may still be harmonic, provided there is a correct relation between the leakage, resistance, inductance and capacity.

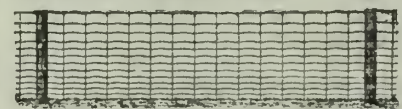
CONCERNING the useful aspect of earthquake observations in Japan, it is now clearly recognized that ordinary engineering practice as applied to embankments, piers for bridges, tall chimneys, the framing of ordinary dwellings and other structures is to be avoided; and whenever, as, for example, after a disastrous earthquake or a fire, reconstruction is required, new methods are adopted, and the loss of life and property is being steadily reduced. The application of seismometry to measuring the irregular movements of locomotives has resulted in new forms of balancing the engines, with, among other incidents, a marked saving of fuel. By the use of seismographs along the coast of Japan, submerged areas of seismic activity have been mapped through which it would be dangerous to lay a cable. Instruments which record the unfelt movements of the earth's crust sometimes tell us that cable interruption is due to earthquake action so far from land that it cannot be felt by those on shore. These instruments, wherever they are established, give information of great seismic disturbances, even when they take place at the antipodes of the place of observation. Hence they enable us to correct, confirm, and even to disprove telegraphic information.

Mathematical calculations show that an iron ship weighs twenty-seven per cent less than a wooden one, and will carry 115 tons of cargo for every one hundred tons carried by a wooden ship of the same dimensions, and both loaded to the same draught of water.

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The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.



Seek-No-Further.

With two heavy, self-regulating bars at the top to stop horses, and close meshes at bottom to hold pigs; with 16 cross bars to the rod, and all from best material, we think Page Fence complete. PAGE WOVEN WIRE FENCE CO., Adrian, Mich.

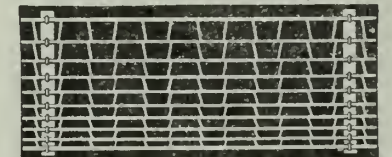


A Good Wagon

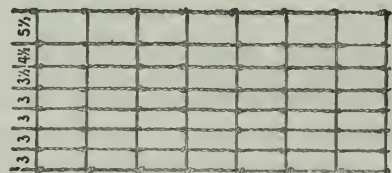
begins with good wheels. Unless the wheels are good the wagon is a failure. IF YOU BUY THE ELECTRIC STEEL WHEEL made to fit any wagon—your wagon will always have good wheels. Can't dry out or rot. No loose tires. Any height, any width tire. Catalog free. ELECTRIC WHEEL CO., Box 10 QUINCY, ILL.

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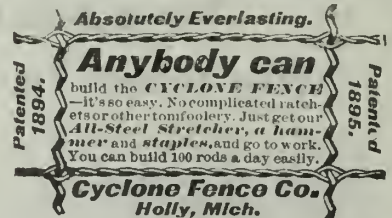


THE ADVANCE WOVEN WIRE FENCE which is sold direct to the farmer, freight paid, we believe to be the best fence made for the money. Our plan of selling saves the farmer the dealer's profit and brings the fence to a price that beats the hand fence machine both for cheapness and quality of fence. A continuous fence; all the wires being interwoven—no loose ends; the wires can't slip. Prices way down. Send for our new circular and extra special discount to farmers. ADVANCE FENCE CO., 51 Old St. Peoria, Ill.



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with or without lower cable barbed. All horizontal lines are cables, not effected by heat and cold. Steel Picket Lawn and M.M.S. Poultry Fence, Steel Gates, Posts, etc. UNION FENCE CO., DeKalb, Ill.



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The Bean Spray Hose is chemically prepared and will withstand corrosive washes.

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The Forbes Cultivator.

COMPACT. DURABLE. LIGHT DRAFT.



Best Iron and Steel. No woodwork to weather-check or split. No neck draft. Teeth and Shovels will not clog. Driver has his work in front of him. Any tooth may be used.

The Forbes Cultivator is made in two sizes, eleven or thirteen teeth. The eleven-tooth cuts six feet in width, or by removing bolts can be reduced to five-foot or even smaller if desired. The eleven-tooth is calculated for a two-horse machine. The thirteen-tooth for three or four horses, and cuts either five, six or eight feet in width. This implement is commended by all who use it. For further particulars call on or address

GEORGE W. FORBES, Patentee and Manufacturer, Guberville, Santa Clara Co., Cal.

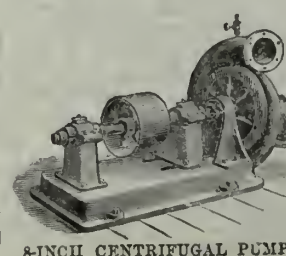
Krogh Manufacturing Co.,

WORKS: 9 TO 17 STEVENSON STREET, SAN FRANCISCO, CAL.

Irrigation Machinery a Specialty.

GENERAL CONTRACTORS FOR Mining, Water Works & Hydraulic Machinery.

Corliss Steam Engines, Automatic High-Speed Engines, Link Chain, Elevators, Centrifugal Pumps, Windmills, Horse Powers, Boilers, Pipe, Fittings, Etc.



8-INCH CENTRIFUGAL PUMP.

SEND FOR CIRCULARS.

STATE OF OHIO, CITY OF TOLEDO, ss.
LUCAS COUNTY,

FRANK J. CHEYNEY makes oath that he is the senior partner of the firm of F. J. CHEYNEY & Co., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of CATARRH that cannot be cured by the use of HALL'S CATARRH CURE.

Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1898.

A. W. GLEASON, Notary Public.

Hall's Catarrh Cure is taken internally, and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.

F. J. CHEYNEY & CO., Toledo, O.

Sold by Druggists, 75c.

Hall's Family Pills are the best.

Coast Industrial Notes.

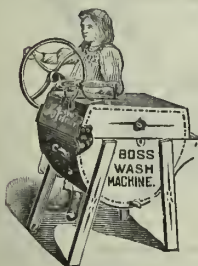
—The California State Board of Trade has adopted rules under which California will make an exhibit at the Omaha exposition. The two essential conditions imposed are that 10,000 feet of floor space in the exposition building, at Omaha, be donated free of cost, and that by April 1st \$15,000 be in the hands of the Board of Trade, which undertakes to collect the exhibits.

—H. J. Crocker of San Francisco has bought almost the whole bond issue of the Sierra Railway Company of California. Of the total issue of \$634,000 he takes \$515,000. The road, which runs from Oakdale, Cal., to Jamestown, forty-three miles, was completed and commenced operating November 10th, '97. The bonds are 6 per cent forty-year gold bonds, secured by a first mortgage on the road and its equipment, and a sinking fund of 5 per cent of the annual net earnings is provided for.

—At Salinas, Cal., the new beet sugar factory and refinery will be of unusual dimensions. Main building—582 feet long, 102 feet wide, 5 stories high; contains 3500 tons of steel, 4,000,000 bricks and 800 squares of slate. Boiler house—559 feet long, 68 feet wide, 22 feet high; contains nearly 1,000,000 bricks, 12 boilers, 4 economizers, 2 steel smokestacks 216 feet high, 13 feet in diameter; each stack with base weighs 1000 tons. Machine shop and carpenter shop—559 feet long, 40 feet wide, 22 feet high; contains about 600,000 bricks. Water required to keep mill running, 13,000,000 gallons per day. Will consume about 1200 barrels of oil per day of twenty-four hours, or its equivalent in wood or coal; will cut 3000 tons of beets per day of twenty-four hours. Sugar—Will produce about 450 tons of sugar daily.

—Los Angeles, Cal., reports that the price of oil remains at \$1 a barrel, with increasing demand. The Oil Producers' Trustees report having concluded contracts last week for the delivery to six oil-consuming firms of Los Angeles of 150,000 barrels of oil. In no single case of the six contracts does the period of delivery for the quantity of oil contracted for extend beyond one year, and in one case the quantity called for in the contract is to be delivered within three months. They also report having made an agreement with firms in San Francisco for the delivery of 60,000 barrels of oil within one year from February 1. The contracts with these San Francisco firms give the latter the privilege of contracting for an additional 60,000 barrels for delivery within the same period, and it is believed that contracts for that additional quantity will be signed during the present week. These deliveries in San Francisco will be in addition to contracts already in force, and which call for an average of 10,000 barrels a month.

"BOSS WASHER."



GREATEST SAVER OF
HOUSEHOLD LABOR
EVER INVENTED.

With Points of Excellence found in no other Washing Machine on the market.

Free from Every Objection.
Guaranteed Satisfactory.

W. C. RARIG, Agent,
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We Outfit Prospectors COMPLETELY.
We Do It BETTER and CHEAPER than
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MENZO SPRING, Proprietor,
Manufacturer of the BEST
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Office and 9 Geary Street, San Francisco, Cal.
Address: (Junction Kearny and Market.)
Send for Measure Blanks for Self-Measurements; free to any address on application. Commissioned by U. S. to furnish Limbs on Government Orders. Artificial Limbs Repaired with Skill and Dispatch.

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Surveying, Architecture, Drawing and Assaying
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Assaying of Ores, \$25; Bullion and Chlorination Assay, \$25; Blowpipe Assay, \$10. Full course of assaying, \$50. Established 1884. Send for Circular.

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512 to 516 Sacramento St., San Francisco, Cal.
BLAKE, MOFFITT & TOWNE, Los Angeles.
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Inflammatory Rheumatism.

From the St. Lawrence Plaindealer, Canton, N. Y.

To suffer for years with a prevailing painful ailment, which baffled skillful medical treatment, yet which was cured by a simple household remedy, is the lot which befell Mrs. George L. Rogers of West Main Street, Canton, N. Y.

"Thirteen years ago," said Mrs. Rogers to a reporter, "I was attacked with inflammatory rheumatism and a complication of diseases.

"You can judge somewhat of what I endured, when you look at these hands. They were distorted, twisted and swollen. My foot, too, is so much out of shape that the big toe lays across the others, the end touching the little toe.

"Notwithstanding I am sixty-five years old, have a pleasant home and other comforts, life to me was far from enjoyable, for all other things pale into insignificance when you are without good health.

"I tried different doctors and many proprietary remedies, but no permanent benefit was obtained.

"Last March I tried Dr. Williams' Pink Pills for Pale People and before I had finished the first box I began to feel that they were doing me good. I continued using them and steadily grew better.

"I have used thirteen boxes of the pills and to-day feel better than for the past fifteen years.

"My appetite is good, I feel bright, cheerful and have a desire to live and enjoy society.

"I have been a member of the Methodist church for many years, but for six years was unable to attend. I am able now to attend the church services regularly and certainly appreciate that privilege.

"I consider Dr. Williams' Pink Pills for Pale People a wonderful medicine and am confident no other medicine could have effected the wonderful cure they have in my case.

"I am glad to state this, hoping that some sufferer may profit by it and obtain relief."

It was nature's own remedy that accomplished this cure caused by impure blood, for Dr. Williams' Pink Pills for Pale People are composed of vegetable remedies that exert a powerful influence in purifying and enriching the blood. Many diseases long supposed by the medical profession to be incurable have succumbed to the potent influence of these pills. This universal remedy is sold by all druggists.

—D. Ward of Detroit, Mich., has bought 8000 acres timber land in Humboldt and Del Norte counties, Cal., for \$80,000.

Seeds, Plants, Etc.

For Planting Season of 1898

We offer for sale a choice lot of

Budded Orange and Lemon Trees,

One and two-year buds of the leading varieties, on sour or sweet stock.

Prices to Suit the Times.

SEEDLING ORANGE TREES at your own price.

Correspondence solicited.

Oroville Citrus Association,
Oroville, Butte Co., Cal.

Seed Raised

GREGORY'S SEED CATALOGUE 1898

from carefully selected cabbage, onion, carrot, beet, etc., and yet at as low prices as seed raised from trash. Try the Surprise Pea, warranted to be the very earliest of all the wrinkled sorts. Try the Enormous potato (604 bus. per measured acre) the best of all the early beets, the new cabbage, cucumber, lettuce, etc. To have the best garden you will need our catalogue, it contains the best varieties of vegetable seed, many of them of our own raising. The Flower Seed page is of particular interest to wife and daughter. It is free.

JAMES J. H. GREGORY & SON,
Established 43 years. Marlborough, Mass.

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MONTEREY CYPRESS,
FOR SALE in Lots to Suit.

Write for prices delivered on wharf in San Francisco. Address
W. A. T. STRATTON, Nurseryman, Petaluma, Cal.

NUT & FRUIT TREES

Of all desirable varieties.

Immense Stock.

300 Acres—60 Years.

BOOK ON NUT CULTURE, 157 PAGES.

60 ILLUSTRATIONS, telling how to propagate, market and cook them.

PRICE, \$1 or free with an order of Nut Trees for \$5. Catalogue Free.

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Parry, New Jersey.

FOR 14 CENTS

We wish to gain 150,000 new customers, and hence offer

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|-----------------------------|-----|
| 1 Pkg. 13 Day Radish, | 10c |
| 1 Pkg. Early Spring Turnip, | 10c |
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| 1 " Bismarck Cucumber, | 10c |
| 1 " Queen Victoria Lettuce, | 10c |
| 1 " Klondyke Melon, | 10c |
| 1 " Jumbo Giant Onion, | 10c |
| 3 " Brilliant Flower Seeds, | 10c |

Worth \$1.00, for 14 cents.

Above 10 pkgs. worth \$1.00, we will mail you free, together with our great Plant and Seed Catalogue upon receipt of this notice and 1c. postage. We invite your trade and know when you once try Salzer's seeds you will never get along without them. Potatoes at \$1.50 a Hbl. Catalogue alone 5c. No. 27

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grow paying crops because they're fresh and always the best. For sale everywhere. Refuse substitutes. Stick to Ferry's Seeds and prosper. 1898 Seed Annual free. Write for it.

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WATSONVILLE, CALIFORNIA.

30 YEARS UNDER THE SAME MANAGEMENT.

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FRUIT TREES,

Soft-Shell Walnut Trees, Small Fruits, Etc. AT THE VERY LOWEST PRICES.

Introducer of the Logan Berry. The genuine plants can be had by the 100 or 1000.

JAMES WATERS, Proprietor. Send for Prices.

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CLAIRAC MAMMOTH IMPERIAL, and GIANT PRUNES.

WICKSON, RED JUNE, and Other Choice Japanese PLUMS.

A fine lot of California Soft-Shell Walnuts and other nursery stock.

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THE LEADING GROWERS IN THE STATE OF

Deciduous Fruit, Olives, Citrus, Ornamental Trees and Grape Vines.

NEW FRUITS: Imperial and Giant Prune, Wickson Plum, Triumph Peach, Winter Bartlett Pear. A well selected and complete assortment of Palms, Roses and Green-house Plants.

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Special Quotations on Carload Lots.

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Fruit, Ornamental and Semi-Tropical.



Palms, Roses and Evergreens.

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We offer a Complete Stock for the Orchard, Vineyard and Garden. For Complete List, Send for Our New Catalogue.

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MYROBOLAN NURSERY.

NO IRRIGATION.

Offers for the Season of 1897-8 a Complete Assortment of

CLEAN, . . . Fruit Trees.
HEALTHY, . . .
NON-IRRIGATED

Correspondence Solicited.

JAS. O'NEILL, Haywards, Alameda Co., Cal.

For the Season 1897-1898.

J. T. BOGUE,
NURSERYMAN,

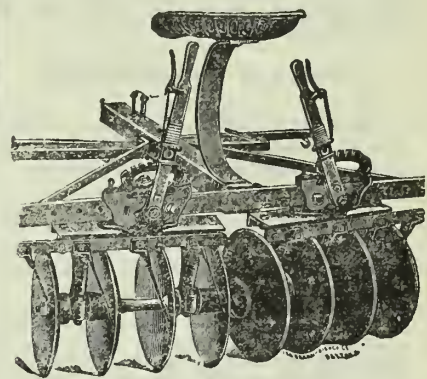
MARYSVILLE, CALIFORNIA.

ALL KINDS OF

Fruit and Ornamental Trees.

PHILIPS' CLING PEACH TREES.

ASK FOR PRICES.



Pacific Reversible Disc Harrow.

4-foot, 5-foot and 6-foot sizes in 16 or 20-inch discs. We guarantee that this Harrow can be more quickly reversed than any machine in the market. Our prices are a revelation. An extension can be furnished admitting of a space of between 5 and 6 feet between gangs. A center-cut device can be furnished, if desired.

HOOKER & CO.,

16 and 18 Drumm St., San Francisco.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR WEEK ENDING FEBRUARY 1, '98.

- 598,466.—PUMP—R. Addison, Pasadena, Cal.
 598,172.—TELEPHONE—Barron, Reid & McDouell, Tacoma, Wash.
 598,354.—WINDOW SHADE FIXTURE—G. Biehn, North Yakima, Wash.
 598,412.—OFFSET MECHANISM—F. W. Cook, Placerville, Cal.
 598,364.—CUTTERHEAD—F. E. Dalzell, S. F.
 598,474.—MUCILAGE BOTTLE—P. E. Daniels, Oakland, Cal.
 598,336.—BICYCLE GEAR—W. B. Featherstone, S. F.
 598,177.—TRUSS—F. Fette, Collegeville, Cal.
 598,146.—PROSPECTING TOOL—E. S. Glover, S. F.
 598,084.—ORE FURNACE—L. D. Goddard, Everett, Wash.
 598,419.—AUTOMATIC PIANO PLAYER—F. R. Goodman, Los Angeles, Cal.
 598,340.—FLUX—G. Hammond, S. F.
 598,341.—SOLDER—G. Hammond, S. F.
 598,347.—AIR BRAKE COUPLING—J. C. Look, San Jose, Cal.
 598,348.—AIR BRAKE COUPLING—J. C. Look, San Jose, Cal.
 598,227.—VAULTING GATE—L. E. Marshall, Martinez, Cal.
 598,382.—BRACE—J. H. Morrison, Prescott, A. T.
 598,380.—AIR VALVE—T. A. Noble, Seattle, Wash.
 598,388.—MUCILAGE HOLDER—F. F. Peek, Susanville, Cal.
 598,349.—BRUSH HANDLE—A. W. Permento, S. F.
 598,183.—TELEPHONE—Reid & McDouell, Tacoma, Wash.
 598,204.—FIRE ESCAPE—J. Robbins, Portland, Or.
 598,127.—COMPOSITE TIMBER—H. F. Williams, S. F.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

BICYCLE GEAR CHANGING MECHANISM.—Willard B. Featherstone, San Francisco, Cal.; assignor to the Lo-Hi Sprocket Co. No. 598,336. Dated February 1, 1898. This invention relates to a device which is especially adapted for changing the gears upon bicycles, tricycles, or any vehicle to which the device can be applied, so that the speed of the driving mechanism can be changed from a higher to a lower, and vice versa. It consists essentially of a crank shaft having a pinion fixed thereto, a disk exterior thereto having two different diameters, one of which forms a clutch to engage the pinion when both have a common center of rotation, and larger internal gearing at one side of the clutch flange; a disk eccentrically pivoted to the frame concentric with and forming a bearing about which an exterior sprocket wheel is turnable, lugs by which the sprocket wheel is connected with the internally toothed disk and a mechanism by which the disk is moved endwise upon its shaft so as to first disengage the smaller circle of teeth upon the pinion, and, secondly, to turn the eccentric disk about its fulcrum point to engage the larger internal teeth of the disk with the pinion and produce a slower movement.

BRUSH-HANDLE SCRAPER ATTACHMENT.—Anthony W. Permento, San Francisco, Cal. No. 598,349. Dated February 1, 1898. This invention relates to an improved scraping attachment for brushes and similar articles, the object of which is to enable the user to scrape and clean paint or to clean mud from shoes before blacking, and other similar purposes. It consists essentially of a handle with a slot or channel made in the end, a blade slidable in the channel and conforming substantially in outline to the shape of a handle, cam-shaped slots in the blade and pins in the handle engaging the slots so that the blade may be moved longitudinally and also transversely to project its end beyond the end of the handle, and its edge beyond the side.



NEWTON'S LATEST IMPROVED DEHORNERS

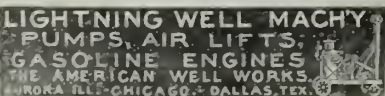
Save time and money by dehorning your cattle. Write us for special information on the subject.
H. H. BROWN MFG. CO.
 DECATUR, ILL.



For a knife that will cut a horn without crushing, because it cuts from four sides at once get—
THE KEYSTONE DEHORNER
 It is humane, rapid and durable. Fully warranted. HIGHEST AWARDS AT WORLD'S FAIR. Descriptive circulars FREE. E. E. A. C. BROWN, Cochranville, Pa.



SMOKE YOUR MEAT WITH KRAUSERS LIQUID EXTRACT OF SMOKE
 CIRCULAR. E. KRAUSER & BRO. MILTON, PA.



LIGHTNING WELL MACH'Y PUMPS, AIR LIFTS, GASOLINE ENGINES
 THE AMERICAN WELL WORKS
 CHICAGO, ILL.—CHICAGO, DALLAS, TEX.

Breeders' Directory.

Six lines or less in this directory at 50c per line per month.

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F. H. BURKE, 626 Market St., S. F. Holsteins, winners for three years of State Fair butter contests; Jerseys and Durhams competing. New Catalogues. Registered Berkshires.

JERSEYS, HOLSTEINS & DURHAMS. Best Butter and Milk Stock. Thoroughbred Hogs and Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

JERSEYS—The best A. J. C. C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

BULLS—Devons and Sporthorns. All pure bred and registered. Fine individuals. At prices to suit the times either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

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CALIFORNIA POULTRY FARM, Stockton, Cal. Send for illustrated and descriptive catalogue, free.

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WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

MANHATTAN EGG FOOD, Red Ball Brand, at all grocers; or wholesale, Tillman & Bendel, S. F.

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ELIAS GALLUP, Breeder of Poland China Hogs, Hanford, Kings Co., Cal.

BERKSHIRE AND POLAND-CHINA HOGS, Best Stock; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

J. P. ASHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Swine.

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RANCHO BENITO KENNELS, Thor'd Scotch Collies. Pups for sale. At stud, imp. Ormskirk Blucher; fee \$35. Stewart & Son, Aransas, Cal.

Improved Pacific Incubator.

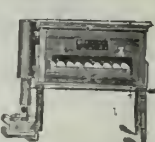
Absolutely Self-Regulating, Hot Water.



Send stamp for our catalogue of Incubators, Wire Netting, Blooded Fowls and Poultry Appliances generally. Remember the Best is the Cheapest.

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 1317 Castro St., Oakland, Cal.

PETALUMA INCUBATORS



And up—Best Incubator made. More practical progressive features than any other. Indisputable evidence that our system is the correct one. Catalogue free. We Pay Freight. **PETALUMA INCUBATOR CO.**, Petaluma, Cal.

THE SUCCESSFUL INCUBATOR



is the standard machine for hatching strong, healthy chicks. Self-regulating, patent turning trays, drying room for chicks, non-explosive lamp—just a few of its good points. Sold under positive guarantee to work perfectly. Beautifully made and durable. Our 128 page catalogue describes them fully; tells many things about poultry raising you should know. Mailed for 6 cts. **DES MOINES INC. CO.**, Box 540 DES MOINES, IA.



BARGAINS IN BICYCLES
 NEW AND SECOND-HAND
 FROM \$20 UP
 Send for List. **Hooker & Co., San Francisco**

The Best Offering of Registered Hereford Cattle Ever Made in America.

SUNNY SLOPE, EMPORIA, LYONS CO., KANSAS,

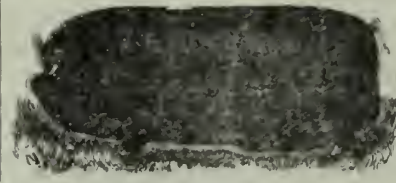
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March 2 and 3, 1898,

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150 Head of Registered Hereford Cattle of the Highest Quality and Most Fashionable Breeding. 40 Head of These are Our Recent Importation of the Best Animals from the Best Herds in England. Auctioneers: Col. J. W. Judy, Col. F. M. Woods, Col. S. A. Sawyer, Col. F. M. Sparks.

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Always in the Lead!

In the face of the strongest competition ever known at a California State Fair our swine herd again carried off the majority of the premiums. Why? Because we have the best pigs in the State. Choice pigs from prize winners ready to ship at reasonable prices. Write for Catalogue and Prices.

SESSIONS & CO.
 Lynwood Creamery, Dairy and Stock Farm,
 JAS. R. BOAL, M'gr. P. O. Box 686, Los Angeles, Cal.

"ALAMO" HEREFORD CATTLE FARM,

1½ Miles South of Reno, Nevada.

300 HEAD OF

Registered HEREFORDS

Bred from the most noted herds in England and the United States.

Awarded at California State Fair 42 individual, special and sweepstakes in 1896, aggregating in cash premiums \$201.50.

At State Fair held at Sacramento in 1897 received Gold Medal; Sweepstakes for herds and every premium given to Hereford cattle.

Stock in all Classes for Herds or Individual Cattle for Sale.

JOHN SPARKS, Proprietor,
 RENO, NEVADA.



Improved Fresno Scraper.

5-Foot. Weight, 300 lbs. \$26.00.
HOOKE & CO., 16-18 DRUM ST., SAN FRANCISCO.

DEWEY, STRONG & Co.,

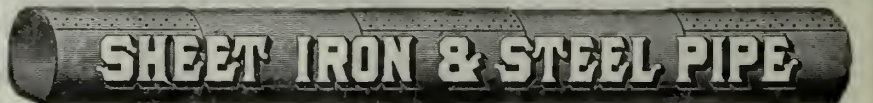
PATENT SOLICITORS,

330 MARKET STREET, - SAN FRANCISCO, CAL.

Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced first-class agency. We have able and trustworthy associates and agents in Washington and the capital cities of the principal nations of the world. In connection with our scientific and Patent Law Library, and record of original cases in our office, we have other advantages far beyond those which can be offered some inventors by other agencies. The information accumulated through long and careful practice before the Office, and the frequent examination of patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us to give advice which will save inventors the expense of applying for patents upon inventions which are not new. Circulars and advice sent free on receipt of postage. Address **DEWEY, STRONG & CO., Patent Agents, 330 Market St., San Francisco, Cal.**

FRANCIS SMITH & CO.,

—MANUFACTURERS OF—



FOR TOWN WATER WORKS.

Hydraulic, Irrigation and Power Plants, Well Pipe, Etc., all sizes.

130 BEALE STREET, SAN FRANCISCO, CAL.

Iron cut, punched and formed, for making pipe on ground where required. All kinds of Tools supplied for making Pipe. Estimates given when required. Are prepared for coating all sizes of Pipes with Asphaltum.

RHEUMATISM

Permanently cured by using DR. WHITEHALL'S RHEUMATIC CURE. The surest and the best. Sample sent free on mention of this publication. **THE DR. WHITEHALL MEDICINE CO., South Bend Indiana**

S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, February 16, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|-----------------|-----------------|
| Wednesday..... | 96 1/2 @ 95 1/2 | 85 1/2 @ 84 1/2 |
| Thursday..... | 96 1/4 @ 97 | 84 1/4 @ 85 1/4 |
| Friday..... | 96 1/4 @ 97 1/2 | 86 1/2 @ 85 1/2 |
| Saturday..... | 97 1/2 @ 98 1/4 | 85 1/4 @ 85 1/4 |
| Monday..... | 97 1/2 @ 98 1/4 | 85 1/4 @ 85 1/4 |
| Tuesday..... | 96 1/2 @ 99 1/2 | 86 1/2 @ 85 1/2 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|------------|------------|
| Wednesday..... | 7s 4 1/2 d | 7s 1 1/2 d |
| Thursday..... | 7s 5 1/2 d | 7s 1 1/2 d |
| Friday..... | 7s 6 1/2 d | 7s 2 1/2 d |
| Saturday..... | 7s 7 1/2 d | 7s 2 d |
| Monday..... | 7s 5 1/2 d | 7s 1 1/2 d |
| Tuesday..... | 7s 6 d | 7s 2 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|---------------------|-----------------------|
| Thursday..... | \$1 40 @ 1 39 1/2 | \$1 31 1/2 @ 1 31 1/2 |
| Friday..... | 1 39 1/2 @ 1 39 1/2 | 1 31 1/2 @ 1 31 1/2 |
| Saturday..... | 1 40 1/2 @ 1 41 | 1 33 1/2 @ 1 34 1/2 |
| Monday..... | 1 41 @ 1 40 | 1 33 1/2 @ 1 32 1/2 |
| Tuesday..... | 1 40 1/2 @ 1 41 1/2 | 1 32 1/2 @ 1 33 1/2 |
| Wednesday..... | 1 40 1/2 @ 1 41 1/2 | 1 32 1/2 @ 1 33 1/2 |

Wheat.

The San Francisco market for spot Wheat, so far as quotable values are concerned, is in virtually the same position as a week ago, and has shown no appreciable fluctuations in the meantime. Business in the open market has been of insignificant proportions, however, shippers holding off, while growers and holders of Wheat showed no anxiety and no disposition to crowd Wheat to sale. The speculative market fluctuated considerably, particularly in Chicago, where the contest between the Leiter and Armour interests is still on. May Wheat in Chicago was crowded Wednesday to \$1.05 1/2, but July was not correspondingly strong, closing only about 2 1/2 c higher than previous day. Liverpool futures showed a gain during the week equivalent to about 5c per cental. Speculative values in this center averaged higher than previous week, with improvement most pronounced on December Wheat, which recorded an advance of about 2 1/2 c, as against 1 1/2 c gain on May option.

Shippers have been operating very lightly since the first of the year, and especially during the current month. In the first half of February only four wheat cargoes cleared from this port. If the next two weeks show no better record, the month will have lighter wheat exports to its credit than any month since last July. The prevailing inactivity is certainly not wholly to the suiting of exporters. They would willingly buy more wheat than has been offering lately, only it is held at stiffer figures than they can see their way clear to pay. Some of the shippers are seriously handicapped by having vessels engaged which they chartered to arrive at about 5 shillings per ton above the best freight rates now obtainable. On a medium ship the above would net a loss of about \$4000. This is naturally unpleasant medicine, and readily accounts for their slowness in bidding up on wheat. They may be compelled, however, to pay considerably higher prices before the season closes, even if foreign markets and freights should be more against them than they are at present. They speculated on being able to depress the wheat market and lost, so they have only themselves to blame. If there had been heavy rains throughout the State, the chances are the market for ocean freights would to-day be enough higher and the local wheat market enough lower to bring the shippers out ahead who have been chartering ships to arrive and paid figures wholly unwarranted by the present conditions.

| | |
|-------------------------------------|---------------------|
| California Milling..... | \$1 45 @ 1 50 |
| Cal. No. 1 shipping, alongside..... | 1 42 1/2 @ 1 45 |
| Oregon Valley..... | 1 40 @ 1 43 1/2 |
| Walla Walla Blue Stem..... | 1 42 1/2 @ 1 47 1/2 |
| Walla Walla Club..... | 1 35 @ 1 42 1/2 |

CALL BOARD PRICES.

On San Francisco Call Board prices for No 1 white wheat per cental for the week were as follows for the options named:

| |
|--|
| May, 1898, delivery, \$1.39 1/2 @ 1.41 1/2. |
| December, 1898, delivery, \$1.31 1/2 @ 1.34 1/2. |
| Wednesday, at regular noon session of Call |

Board, May wheat sold at \$1.40 1/2 @ 1.41 1/2; December, 1898, \$1.32 1/2 @ 1.33 1/2.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|-----------------------|-------------------|
| Liv. quotations..... | 6s7d @ 6s8d | 8s1d @ 8s2d |
| Freight rates..... | 15 @ 16 1/4 s | 28 1/2 @ 31 1/4 s |
| Local market..... | \$1.37 1/2 @ 1.42 1/2 | \$1.42 1/2 @ 1.45 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

Relatively lower figures for flour continue to prevail than are current for wheat. This is likely to continue to be the case so long as bran and other mill feed command anything, near the comparatively high rates which have been lately ruling. The profit on the offal has been enabling millers to sell flour at less than cost of production, an opportunity which they are not slow to embrace on account of the cutting competition in this line of trade.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | \$3 00 @ 3 25 |
| Superfine, good to choice..... | 3 35 @ 3 60 |
| Country grades, extras..... | 4 00 @ 4 25 |
| Choice and extra choice..... | 4 25 @ 4 50 |
| Fancy brands, jobbing..... | 4 50 @ 4 65 |
| Oregon, Bakers' extra..... | 3 90 @ 4 25 |
| Walla Walla, Bakers' extra..... | 3 90 @ 4 25 |

Barley.

Firmness was a feature fully as prominent in the barley market as during preceding week. Stocks and offerings are light in this center, and, according to most reliable reports from interior points, there is not much to come forward from any quarter of the State. Although there should be a good crop the coming harvest, which is now extremely doubtful, values during the balance of this season will be apt to remain at a tolerably high range, with prospects of about all the barley now on hand being required before new crop will become available. Options commanded higher figures than previous week. Market closed strong.

| | |
|---------------------------------|-----------------|
| Feed, No. 1 to choice..... | 1 05 @ 1 10 |
| Feed, fair to good..... | 1 02 1/2 @ 1 05 |
| Brewing, No. 1 to choice..... | 1 12 1/2 @ 1 20 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

| |
|--|
| May, 1898, delivery, 95 1/2 @ 99 1/2 c. |
| December, 1898, delivery, 92 @ 92 1/2 c. |

Wednesday at regular noon session of the Call Board May, 1898, feed sold at 98 1/2 @ 99 1/2 c; Dec., 1898, 92 1/2 @ 92 c.

Oats.

There is no radical change to record, but the market is perhaps a little more favorable to sellers than it was during preceding week. Receipts show little or no decrease, as compared with a fortnight or more preceding. While there are fairly liberal supplies of oats now in this center, they are mostly in strong hands, able to carry them. The general firmness for other feed cereals is helping to sustain values for oats.

| | |
|-------------------------------|---------------------|
| White Oats, fancy feed..... | 1 20 @ 1 25 |
| White, good to choice..... | 1 15 @ 1 20 |
| White, poor to fair..... | 1 10 @ 1 12 1/2 |
| Gray, common to choice..... | 1 15 @ 1 20 |
| Milling..... | 1 17 1/2 @ 1 22 1/2 |
| Surprise, good to choice..... | 1 20 @ 1 27 1/2 |
| Black Russian..... | 1 20 @ 1 50 |
| Red..... | 1 10 @ 1 40 |

Corn.

The market is about as favorable to sellers as last quoted, although there have been further receipts of Eastern corn and moderate arrivals of home product. Most of the growers in this State are holding for higher figures than are now current. There will probably be considerable corn imported here from Nebraska during the next few months; and while it will undoubtedly affect the market for the home article, the imported will be mostly of ordinary quality, unsuited to take the place of choice unmixed California corn.

| | |
|----------------------------------|-------------|
| Large White, good to choice..... | 1 05 @ 1 10 |
| Large Yellow..... | 1 05 @ 1 10 |
| Small Yellow..... | 1 10 @ 1 15 |
| Eastern Yellow..... | — @ — |
| Egyptian White..... | — @ — |
| Popcorn, shelled, P. B..... | — @ — |

Rye.

Values remain at about same range as last noted. The demand is not particularly active, but it is sufficient to absorb all stocks offering at the rates now current.

| | |
|--------------------------|-----------------|
| Good to choice, new..... | 1 05 @ 1 07 1/2 |
|--------------------------|-----------------|

Barley.

There have been no arrivals of consequence

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for nearly a month. The market is quite strong in tone. Desirable offerings would probably bring a moderate advance on rates quoted.

| | |
|---------------------|-------------|
| Good to choice..... | 1 75 @ 1 85 |
| Silverskin..... | — @ — |

Beans.

The general drift of values in this market has been in favor of the selling interest, although on colored kinds there was a little top-heaviness observable, especially on Bayos and Pinks. While the latter two kinds have been higher in years gone by, they are being held at decidedly stiff figures as compared with prices current only a short time ago, and also as compared with rates now prevailing on other varieties. White kinds are commanding considerable attention, partly on speculative account, the belief being entertained that they will rule higher. Limas are tending upward, partly owing to dry weather in the southern coast section, where most of these are grown.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 50 @ 1 60 |
| Small White, good to choice..... | 1 50 @ 1 65 |
| Lady Washington..... | 1 45 @ 1 55 |
| Butter, small..... | 1 45 @ 1 55 |
| Butter, large..... | 1 60 @ 1 75 |
| Pinks..... | 2 60 @ 2 75 |
| Bayos, good to choice..... | 2 90 @ 3 00 |
| Reds..... | 2 00 @ 2 25 |
| Red Kidneys..... | 2 00 @ 2 25 |
| Limas, good to choice..... | 1 75 @ 1 85 |
| Black-eye Beans..... | 2 25 @ 2 50 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

Late advices by mail from New York furnish the following concerning the bean market in that center, prices named being per bushel of 60 lbs.:

There has been a pretty large export movement in Marrow beans during the week, but with a good deal of accumulated stock on hand and some urgency to sell holders met the demand promptly at rather easy prices; sales were made at \$1.30 @ 1.32 1/2 f. o. b., and after 1200 bbls. or more had been taken the feeling became somewhat steadier, with the choicest marks now held generally at \$1.32 1/2. The demand from home trade has been too light to give the support that is usually expected at this season of year. Very few Medium have been wanted for home use and values have been weak in consequence. Havana exporters have taken some stock, including a line of 500 bags. It takes very choice lots to command \$1.12 1/2. Pea have sold at irregular rates; perhaps the bulk of the best lots brought \$1.10, but \$1.05 @ 1.07 1/2 was accepted for some. Not much interest of late in Red Kidney and a more or less unsettled feeling has prevailed. Choicest lots in shipping order are offering at \$1.70 f. o. b., and we hear of sales to local dealers at a lower figure. White Kidney have cleaned up very well and the feeling is firm. Scarcely any Turtle Soup available at the moment and jobbers have had to pay \$1.50 for such lots as they could find. Yellow Eye slow. Holders of Lima are asking a little more money and getting it in instances; now quotable at \$1.30 @ 1.32 1/2. Green peas have gained additional strength and close very firm.

Dried Peas.

Market is lightly stocked, especially with choice qualities, the latter being salable to decided advantage.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 90 @ 2 00 |
| Niles Peas..... | 1 50 @ 1 60 |

Hops.

In the local market for hops there are no special changes to record, either for better or worse. There are few hops arriving from any quarter, and not many going outward. To purchase freely full quotations or more would have to be paid, while if stock was crowded to sale it is not likely that full current figures could be realized.

| | |
|--------------------------------|---------|
| Good to choice, 1897 crop..... | 12 @ 16 |
|--------------------------------|---------|

A New York authority gives under recent

date the following review of the hop situation:

Receipts have run very much lighter this week, and more than half of the arrivals were for exportation direct. The movement of stock abroad has kept up on a scale far beyond the expectation of dealers on this side of the water, and the result is a rapidly depleting supply in this country. Late estimates from those who are in a position to know place the amount now in growers' hands in New York State at about 12,000 bales; rarely do any estimates run higher. On the Pacific coast it is thought that 25,000 bales will cover all the lots remaining in first hands. There is a fair quantity of stock in dealers' hands at the various distributing centers, and brewers undoubtedly have quite a good many hops, but the total holdings as compared with the probable needs of our home brewing trade from now until another crop is harvested are very light, and if foreign markets continue to call for additional supplies there is prospect of a shortage and perhaps higher prices. London market is now very strong and advancing, and advices from all continental countries indicate stocks nearly exhausted. On our local market business appears to be quiet, but a fair quantity of hops is being delivered to brewers, and exporters make occasional purchases. Prices are firm throughout, but quotations are not changed.

Wool.

There is not much doing in this center, but holders continue to have confidence, and show no inclination to press wools to sale, where concessions to buyers are necessary to effect transfers. Eastern and foreign markets show a healthy tone and considerable activity. One reason for the lack of activity in the local market is that most of the Eastern manufacturers are fairly well stocked for the time being with the classes of wools held here. Some lively trading is expected in California wools the coming spring and summer.

SPRING.

| | |
|-----------------------------------|---------|
| Oregon Valley..... | 17 @ 18 |
| Oregon Eastern, choice..... | 13 @ 15 |
| Oregon Eastern, fair to good..... | 10 @ 12 |

FALL.

| | |
|----------------------------|-----------|
| Middle County, free..... | 10 @ 13 |
| Do do defective..... | 9 @ 11 |
| Northern, free..... | 11 @ 14 |
| Do defective..... | 10 @ 11 |
| Southern Mountain..... | 9 @ 12 |
| San Joaquin defective..... | 7 @ 8 1/2 |

Hay and Straw.

The market for hay has shown about as much firmness the current week as at any date since the advanced prices recently established have been in force. Light stocks, both here and at interior points, have much to do with keeping values at existing levels, although the market is also materially affected at present by weather influences. Straw was without quotable change.

| | |
|---------------------|---------------|
| Wheat..... | 15 00 @ 18 50 |
| Wheat and Oat..... | 14 00 @ 17 50 |
| Oat..... | 14 00 @ 17 00 |
| Barley..... | 12 00 @ 15 00 |
| Clover..... | 11 00 @ 13 00 |
| Stock Hay..... | 10 00 @ 12 50 |
| Alfalfa..... | 10 00 @ 11 50 |
| Compressed..... | 15 00 @ 18 50 |
| Straw, P. hale..... | 40 @ 50 |

Millstuffs.

Bran and Middlings are in larger supply, and are now obtainable at somewhat lower figures than last quoted. Rolled Barley and Milled Corn were held in the main at higher figures than a week ago.

| | |
|---------------------|---------------|
| Bran, P. ton..... | 20 50 @ 21 50 |
| Middlings..... | 22 00 @ 24 00 |
| Barley, Rolled..... | 23 00 @ 23 50 |
| Cornmeal..... | 24 50 @ 25 00 |
| Cracked Corn..... | 25 00 @ 25 50 |

Seeds.

Little doing at present in seeds of any description. Mustard Seed is virtually out of stock. Not much Flaxseed offering, either on the spot or to arrive. Alfalfa Seed is obtain-

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able at same easy rates as quoted for some time past, with very little inquiry observable.

| | Per cwt. |
|----------------------------|-------------|
| Mustard, Yellow..... | 2 75@3 00 |
| Mustard, Trieste Seed..... | 2 75@3 00 |
| Mustard, Wild Brown..... | 2 00@2 25 |
| Flax..... | 2 20@2 25 |
| Canary..... | 2 1/4@2 1/2 |
| Rape..... | 2 1/4@2 1/2 |
| Hemp..... | 2 1/4@2 1/2 |
| Alfalfa, Utah..... | 2 1/4@2 1/2 |

Bags and Bagging.

A sailing vessel now on the way to this port from Calcutta, the first of this season's fleet, has 7,000,000 wheat bags and 310,000 other bags, besides 835,000 yards Hessians. There are two other sailing vessels en route with bags. A large steamer has been chartered to bring a cargo of bags and bagging from India to this market. No anxiety need be entertained about there being a scarcity of bags for the coming harvest. Business at present is of a light order. Asking figures are without marked change.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, buyer July..... | — @— |
| Calcutta Grain bags, 22x36, spot..... | 5 1/4 @ 5 1/2 |
| State Prison bags, per 100..... | 5 30 @— |
| Wool sacks, 4 lb..... | 30 @— |
| Wool sacks, 3 1/2 lb..... | 27 @— |
| Gunnies..... | 10 @— |
| Bean bags..... | 4 1/4 @ 4 1/2 |
| Fruit sacks, cotton..... | 5 1/4 @ 6 1/2 |

Hides, Pelts and Tallow.

A slightly firmer feeling has been developed in this market for Wet Salted Hides, especially for Heavy Steers. Dry Hides are ruling firm at previous rates. Pelts are commanding steady figures. Tallow of prime to choice quality is bringing fairly good prices.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|-------------|
| Heavy Steers, over 56 lbs..... | 10 1/4 @ 11 | 8 1/4 @ 10 |
| Medium Steers, 48 to 56 lbs..... | 9 1/4 @ 10 | 8 1/4 @ 9 |
| Light Steers, under 48 lbs..... | 9 @ 9 1/2 | 8 @ 8 1/2 |
| Heavy Cow Hides, over 50 lbs..... | 9 @ 9 1/2 | 8 @ 8 1/2 |
| Light Cow Hides, under 50 lbs..... | 9 @ 9 1/2 | 8 @ 8 1/2 |
| Wet Salted Kip..... | — @ 10 | — @ 9 |
| Wet Salted Veal..... | — @ 10 | — @ 9 |
| Wet Salted Calf..... | — @ 11 | — @ 10 |
| Dry Hides..... | 17 @ 17 1/2 | 13 1/4 @ 14 |
| Dry Kip and Veal, 11 to 16 lbs..... | 14 @ 15 | — @ 11 |
| Dry Calf, under 4 lbs..... | 18 @ 20 | 16 @ 17 |
| Horse Hides, large..... | 2 25 @ 2 75 | 2 00 @ 2 25 |
| Horse Hides, medium..... | 2 00 @ 2 25 | 2 00 @ 2 25 |
| Horse Hides, small..... | 2 25 @ 2 50 | 2 25 @ 2 50 |
| Colts' Hides..... | 25 @ 30 | 25 @ 30 |
| Pelts, long wool, per skin..... | 90 @ 1 30 | 90 @ 1 30 |
| Pelts, medium, per skin..... | 70 @ 90 | 70 @ 90 |
| Pelts, short wool, per skin..... | 40 @ 70 | 40 @ 70 |
| Pelts, shearing, per skin..... | 20 @ 30 | 20 @ 30 |
| Deer Skins, best summer..... | 25 @ 30 | 25 @ 30 |
| Deer Skins, good medium..... | — @ 30 | — @ 30 |
| Deer Skins, thin winter..... | 8 @ 10 | 8 @ 10 |
| Elk Hides..... | 3 @ 4 | 3 @ 4 |
| Tallow, good quality..... | 2 @ 3 1/2 | 2 @ 3 1/2 |
| Tallow, No. 2..... | 2 @ 2 1/2 | 2 @ 2 1/2 |
| Goat Skins, perfect..... | 20 @ 27 1/2 | 20 @ 27 1/2 |
| Goat Skins, damaged..... | 10 @ 20 | 10 @ 20 |
| Kid Skins..... | 5 @ 10 | 5 @ 10 |

Honey.

Market is ruling steady for choice to select qualities of both Comb and Extracted, but more especially for the latter, owing to light stocks and a fair demand, both on local account and for shipment. Increased quantities are expected to be consumed in the course of a few weeks, owing to observance of Jewish holidays. Dark grades are not readily salable, and where custom is secured for this sort, very low prices have to be accepted.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 4 1/4 @ 5 |
| Extracted, Light Amber..... | 3 1/4 @ 4 |
| Dark Tule..... | 1 1/2 @ 2 1/4 |
| White Comb, 1-lb frames..... | 7 1/4 @ 9 1/2 |
| Amber Comb..... | 4 @ 6 |

Beeswax.

Not much on market, and there does not appear to be the slightest possibility of there being any excess of stocks during the balance of the season.

| | |
|---------------------------|---------|
| Fair to choice, 1 lb..... | 24 @ 27 |
|---------------------------|---------|

Live Stock and Meats.

Market for Beef continues about as last quoted, with spot supplies not very heavy, but at the same time sufficient for the existing limited demand. Mutton is only in moderate receipt, and for prime to choice the market is firm at the quotations noted, with prospects of an advance at an early day. Hogs were not in as liberal supply as preceding week, and for choice, large and hard, prices were a little higher. Hogs ranging from 150 to 225 pounds were most sought after.

| | |
|---|---------------|
| Beef, 1st quality, dressed, net 1 lb..... | 6 @ 6 1/2 |
| Beef, 2d quality..... | 5 1/2 @ 6 |
| Beef, 3d quality..... | 4 @ 5 |
| Mutton—ewes, 6 1/2 @ 7; wetters..... | 7 @ 7 1/2 |
| Hogs, bard grain fed, medium..... | 4 @ 4 1/2 |
| Hogs, small..... | 3 1/2 @ 3 3/4 |
| Hogs, large bard..... | 4 @ 4 1/2 |
| Hogs, soft and feeders..... | 3 1/4 @ 3 1/2 |
| Hogs, country dressed..... | 4 1/4 @ 4 1/2 |
| Veal, small, 1 lb..... | 6 @ 7 1/2 |
| Veal, large, 1 lb..... | 6 1/2 @ 7 |
| Lamb, 1 lb..... | 7 @ 8 |

Poultry.

For old poultry of nearly every description, and especially for Old Chickens, the market was quite unfavorable for receivers and producers. Eastern poultry interfered with the sale of ordinary domestic. Choice young stock was in very light supply and brought as a rule good prices. Fryers, Broilers, Young Ducks, Goslings and Young Pigeons being each and all in good request.

| | |
|------------------------------------|-------------|
| Turkeys, dressed, 1 lb..... | 10 @ 13 |
| Turkeys, live hens, 1 lb..... | 10 @ 11 |
| Turkeys, live gobblers..... | 9 @ 10 |
| Hens, Cal, 1 doz..... | 3 50 @ 4 50 |
| Roosters, old, 1 doz..... | 3 25 @ 3 50 |
| Roosters, young, (full-grown)..... | 4 50 @ 5 50 |
| Fryers..... | 5 00 @ 5 50 |
| Broilers, large..... | 5 00 @ 5 50 |
| Broilers, small..... | 4 00 @ 4 50 |
| Ducks, young, 1 doz..... | 7 50 @ 8 00 |
| Ducks, old..... | 3 50 @ 4 50 |

| | |
|--------------------------|-------------|
| Geese, 1/2 pair..... | 1 25 @ 1 50 |
| Goslings, 1/2 pair..... | 2 50 @ 3 00 |
| Pigeons, Old, 1 doz..... | 90 @ 1 00 |
| Pigeons Young..... | 1 50 @ 1 75 |

Butter.

Buyers have been able to operate the current week to a little better advantage than at date of last review. Arrivals of fresh were on the increase, and the market lacked firmness, as is almost invariably the case at this time of year, but the absence of strength was more particularly confined to butter unsuited to the most particular trade. There was no noteworthy surplus of strictly select, either in squares or rolls. Stocks of packed butter are very light, and are composed at present almost wholly of Eastern tub.

| | |
|------------------------------------|---------|
| Creamery extras, 1 lb..... | 23 @ 25 |
| Creamery firsts..... | 23 @ 24 |
| Creamery seconds..... | 22 @ 23 |
| Dairy select..... | 22 @ 23 |
| Dairy seconds..... | 19 @ 21 |
| Dairy, soft and weedy..... | — @— |
| Mixed store..... | 15 @ 18 |
| Creamery in tubs..... | 22 @ 24 |
| Pickled roll..... | — @— |
| Dairy in tubs..... | — @— |
| Firkin, Cal, choice to select..... | 22 @ 24 |
| Firkin, common to fair..... | 17 @ 20 |

Cheese.

Market is weak, quotations showing moderate reduction. Neither receipts nor spot supplies are especially heavy, but holders are anxious to effect sales so as to prevent accumulations, feeling confident that there will be no improvement in prices in the near future. The shrinkage incurred in the weight of new cheese is also against holding.

| | |
|-----------------------------------|----------------|
| California fancy flat, new..... | 9 1/4 @ 10 1/4 |
| California, good to choice..... | 8 1/4 @ 9 1/4 |
| California, fair to good..... | 7 1/4 @ 8 1/4 |
| California Cheddar..... | 9 1/4 @ 11 |
| California, "Young Americas"..... | 9 @ 11 |

Eggs.

More demoralization has been seldom witnessed in the egg market than has been experienced since last review. Prices have tumbled during the week 7@8c per doz. Increased arrivals, anxiety of sellers and timidity of buyers combined to make a very sick market. In addition to all local conditions having a depressing effect, four carloads of Eastern were landed here, and on these a heavy loss was sustained. Market closed fairly steady at the decline.

| | |
|---|-------------|
| California, select, large white and fresh..... | 12 1/4 @ 13 |
| California, select, irregular color & size..... | 11 @ 12 |
| California, good to choice store..... | 10 @ 11 |
| California, common to fair store..... | — @— |
| Oregon, prime..... | — @— |
| Held Eastern, as to section and grading..... | — @— |
| Local Cold storage eggs..... | — @— |

Vegetables.

Onion market has been showing a little easier tone. The tolerably stiff prices lately ruling on this vegetable have caused buyers to operate very slowly. About 500 crates of Onions were landed here this week from Australia. While early spring vegetables were in large supply, receipts were on the increase, especially of Peas and Tomatoes from the Los Angeles section, and prices were at a little lower range than a week ago.

| | |
|-------------------------------------|---------------|
| Asparagus, 1/2 lb..... | 15 @ 30 |
| Beans, String, 1 lb..... | 15 @ 20 |
| Beans, Lima, 1 lb..... | — @— |
| Beans, Refugee, 1 lb..... | — @— |
| Beans, Wax, 1 lb..... | — @— |
| Cabbage, choice garden, 100..... | 70 @ 80 |
| Cauliflower, 1 doz..... | 60 @ 70 |
| Corn, Green, 1 sack..... | — @— |
| Corn, Alameda, 1 crate..... | — @— |
| Cucumbers, Alameda, 1 box..... | — @— |
| Egg Plant, 1 lb..... | 15 @ 20 |
| Garlic, 1 lb..... | 2 1/4 @ 3 1/4 |
| Mushrooms, Buttons, 1 lb..... | 12 1/4 @ 15 |
| Mushrooms, Wild, 1 lb..... | 6 @ 10 |
| Okra, Dried, 1 lb..... | 12 1/4 @ 15 |
| Onions, Yellow, good to choice..... | 2 60 @ 2 80 |
| Onions, Yellow, cut..... | 1 75 @ 2 25 |
| Peas, Sweet, Garden, 1 lb..... | 7 @ 9 |
| Peppers, Green Chile, 1 lb..... | 20 @ 25 |
| Rhubarb, 1 box..... | — @— |
| Squash, Summer, 1 lb..... | — @— |
| Tomatoes, 1 box or crate..... | 50 @ 1 00 |

Potatoes.

The generally firm tone noted as existing in the potato market at date of last review has since given way to an easier feeling, owing to rather large arrivals from Oregon. Choice to select table potatoes are in only moderate supply, however, and there is no likelihood of stocks of this sort proving excessive during the next few months. Early seed potatoes are being steadily held, but there is no brisk movement in them at present. Sweet potatoes were offered sparingly, but inquiry was also light.

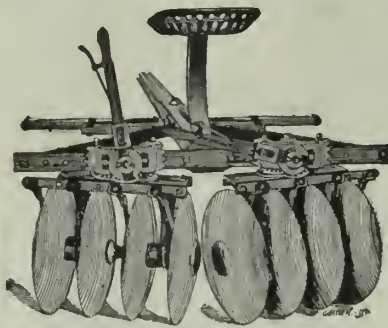
| | |
|--|-----------------|
| Early Rose, River, 1/2 cental..... | 70 @ 80 |
| Pearless, River..... | — @— |
| Reds, River..... | 50 @ 60 |
| Garnet Chib, Mission..... | 75 @ 85 |
| Burbanks, Salinas..... | 75 @ 85 |
| Burbanks, River, 1 sack..... | 60 @ 80 |
| Burbanks, Petaluma and Tomales, 1 cil..... | 70 @ 85 |
| Burbanks, Oregon, 1 cental..... | 70 @ 80 |
| Garnet Chib, Oregon..... | — @— |
| Sweet River, 1 cental..... | — @— |
| Sweet Mercet..... | 1 00 @ 1 12 1/2 |

The Fruit Market.

Fresh Fruits.

The market for fresh fruits presents very little of special interest to record. Apples are the only fruit in a fresh state now offering, aside from citrus. For this late date in the season, Apples are in fair supply, but as is reasonable to expect at this time of year, most offerings are only of fair to medium quality. The demand is rather slow, and especially for the more common sorts custom is not readily obtainable. Sales of common to fairly good were mainly within range of 35@50c, while good to choice found custom in a wholesale way at a quotable range of 75c@1.00 per box. Strictly select, running four tiers to the box, commanded \$1.25@1.50, latter figure being mainly for red of high grade. Fancy Virginia Greenings would probably have commanded an advance on highest figure above noted, but there were no offerings of this sort observed on the market. Strawberries have not put in an appearance up to this writing, but with

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The only DISC HARROW on the market that can be reversed without removing a bolt or taking apart. Reverse by simply operating a lever.

Can be used with extension arms, which can be adjusted to leave a space of 4 to 6 feet between the gangs, enabling the driver to cultivate near the trees or vines without injury, as the levers can be locked parallel with the frame, thereby leaving no obstruction.

Note our patent reversing and adjusting lever.

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Patent Non-Shrinking Water Tank,

The only one suitable for dry, hot climates. COSTS NO MORE THAN COMMON.

Ask your dealer, or write to
PACIFIC TANK CO., Sole Manufacturers,
City Offices: 33 BEALE STREET, SAN FRANCISCO.

favorable weather, such as was experienced the past week, berries are likely to be on market at an early day.

| | |
|--------------------------------------|-------------|
| Apples, fancy, 4-tier, 1/2 box..... | 1 25 @ 1 50 |
| Apples, choice, 4-tier, 1/2 box..... | 75 @ 1 00 |
| Apples, fair to good, 50-lb box..... | 50 @ 75 |
| Apples, common to fair, 1/2 box..... | 35 @ 50 |

Dried Fruits.

The local market for cured and evaporated fruits has developed no important changes since last review. There is some movement in Prunes, but only at low figures, values remaining without quotable change. The market for 40-50's continues much firmer than for the medium sizes, large Prunes being in very light stock. The small sizes, 90-100's, are more readily salable at full current rates than are the different grades running from 60's to 90's, the latter kinds being in heaviest supply. Aside from the business in Prunes, there is little doing, either in the way of transfers from first hands or in sales by jobbers. Quotable values for the different sorts remain as last stated, but for most kinds strength is lacking. Supplies, aside from Prunes and Peaches, are, however, of rather light proportions, and should an active demand set in, it would be by no means phenomenal for the market to develop a fairly healthy tone.

EVAPORATED OR BLEACHED.

| | |
|---|---------------|
| Apricots, Royal, in sacks, per lb..... | 5 1/4 @ 6 |
| Apricots, Royal, fancy..... | 6 1/4 @— |
| Apricots, Moorpark..... | 7 @ 9 |
| Apples, in boxes..... | 7 @ 7 1/4 |
| Figs, fancy pressed..... | 8 @ 10 |
| Nectarines, White..... | 4 1/4 @ 5 |
| Nectarines, Red..... | 4 1/4 @ 5 |
| Peaches, unpeeled, choice..... | 4 @ 4 1/4 |
| Peaches, unpeeled, fancy..... | 5 @ 6 |
| Peaches, peeled, in boxes..... | 9 @ 12 |
| Pears, unpeeled Bartlett's, baled, fancy..... | 7 @— |
| Pears, baled, unpeeled Bartlett's..... | 4 1/4 @ 6 |
| Pears, quartered, unpeeled Bartlett's..... | 4 @ 5 |
| Pears, peeled and sliced..... | — @— |
| Plums, pitted..... | 4 1/4 @ 5 1/4 |
| Prunes, in sacks, 40-50's..... | 5 @ 5 1/4 |
| 50-60's..... | 3 1/4 @ 3 1/2 |
| 60-70's..... | 3 1/4 @ 3 1/2 |
| 70-80's..... | 2 1/4 @ 2 1/2 |
| 80-90's..... | 2 @ 2 1/4 |
| 90-100's..... | 1 3/4 @ 2 |

Above figures are on basis of 2 1/2 @ 3c for 4 sizes. Prunes in boxes, 1/4c higher for 25-lb boxes, 1/2c higher for 50-lb boxes.

| | |
|---------------------------------------|-----------|
| 4 sizes Santa Claras and equal..... | 2 1/4 @ 3 |
| 4 sizes San Joaquin and Northern..... | 2 1/4 @— |
| Prunes, Silver..... | 5 @ 8 |

COMMON SUN-DRIED.

| | |
|-------------------------|-----------|
| Apricots, ordinary..... | 4 @ 5 1/4 |
| Apples, sliced..... | 3 1/4 @ 4 |
| Apples, quartered..... | 3 1/4 @ 4 |
| Figs, Black..... | 2 @ 3 1/4 |
| Figs, White..... | 3 @ 4 |
| Peaches, unpeeled..... | 3 @ 4 |
| Plums, unpitted..... | 1 @ 1 1/4 |

The following report of the dried fruit market in the East comes through by recent mail from New York:

Demand has been more active this week and market for nearly all grades of apples has shown slight improvement. Evaporated are held at 8 1/4 @ 8 1/2c for prime wood-dried, though wire-dried average 1/4c or more lower. Choice to fancy have had jobbing sales in range of 8 1/4 @ 9 1/4c, rarely higher for extra fancy. Stock grading below prime receives little attention. Sun-dried have been rather slow except Southern sliced, which have a fair call, though offerings are light and stock held about steady in price. Chops have had a fair inquiry and rule firm at full late prices, and waste is firm at 2 1/2c, with some bolders asking 2 1/2c. Small fruits are in limited demand, but demand moderate and market quiet and unchanged. California fruit has been quite plenty and desirable stock has met a fairly active demand at full late prices.

| | |
|--|---------------|
| Apricots, Cal. Moorpark, 1897, per lb..... | 7 @ 11 |
| Apricots, Cal. Royal, 1897, per lb..... | 5 1/4 @ 8 1/2 |
| Peaches, Cal., 1897, peeled, per lb..... | 10 @ 17 |
| Peaches, Cal., 1897, unpeeled, per lb..... | 5 1/4 @ 10 |
| Pears, Cal., 1897, per lb..... | 6 @ 10 |
| Prunes, Cal., 1897, per lb..... | 3 @ 8 |

Raisins.

The market in this center is not showing much life. Occasional sales are made from primary points, but the movement is decidedly small in the aggregate as compared with the quantity offering. Choice are being, as a rule, steadily held, but rain-damaged are offering at irregular and generally low figures. A New York journal says under date of the 8th inst.: "California raisins are growing in favor with buyers, about five carloads having changed hands yesterday. Stocks of choice fruit are extremely light, a greater percentage of holdings being rain-damaged." It is rather late to expect any active movement eastward, but larger quantities may move outward in the spring and summer months than is now generally thought probable.

| F. O. B. FRESNO DELIVERY. | |
|--------------------------------------|-------------|
| Imperial Clusters, per box..... | — @— |
| Dehesa Clusters, per box..... | — @— |
| Fancy Clusters, per box..... | — @— |
| Boxes, London layers, 20-lb box..... | 1 00 @ 1 10 |

(Usual advance for fractions.)

| | |
|--------------------------------------|---------------|
| Loose Muscatel, 4-crown, 1/2 lb..... | 3 1/4 @ 4 |
| Loose Muscatel, 3-crown..... | 3 @ 3 1/4 |
| Loose Muscatel, 2-crown..... | 1 1/2 @ 2 |
| Sultanas..... | 3 1/4 @ 3 1/2 |
| Seedless Muscatel..... | 2 @ 2 1/4 |
| Dried Grapes..... | 1 1/4 @ 2 |

Citrus Fruits.

Oranges were in more than ample supply to accommodate the immediate demand, which was far from being active. For choice the market was fairly firm at existing rates, but defective stock, frosted or otherwise seriously faulty, was salable only at very low prices, being wholly neglected by most buyers. Navels sold at auction at a wide range, 75c @ \$2.25 per box, as to quality, quantity and brand. Lemons remained plentiful as compared with the inquiry, and only very select qualities brought satisfactory figures.

| | |
|-----------------------------------|-------------|
| Oranges—Navel 1/2 box..... | 1 00 @ 2 50 |
| Seedlings..... | 75 @ 1 25 |
| Lemons—Cal., select, 1/2 box..... | 2 00 @ 2 25 |
| Cal., good to choice..... | 1 25 @ 1 75 |
| Cal., common to good..... | 75 @ 1 25 |
| Limes—Mexican, 1/2 box..... | 5 50 @ 6 00 |
| Cal., small box..... | 75 @ 1 25 |
| Tangerines, 1/2 box..... | 75 @ 1 25 |
| Grape fruit, 1/2 crate..... | — @— |

Nuts.

There are not enough of either almonds or walnuts now offering in this center to admit of wholesale transactions. In a small jobbing way, tolerably firm prices are being realized. Peanuts are in fair supply and are offering at figures about the same as last quoted.

| | |
|--------------------------------------|---------------|
| California Almonds, paper shell..... | 7 1/4 @ 8 1/4 |
| California Almonds, soft shell..... | 5 1/4 @ 5 1/2 |
| California Almonds, bard shell..... | 3 @ 3 1/2 |
| Walnuts White, paper shell..... | 6 1/4 @ 7 |
| Walnuts White, soft shell..... | 6 1/4 @ 7 |
| Walnuts White, Cal., standard..... | 5 @ 6 1/2 |
| Chestnuts, Cal. Italian..... | 8 @ 9 |
| Peanuts, Cal., fair to prime..... | 4 @ 4 1/4 |
| Peanuts, Eastern hand-picked..... | 5 @ 6 |
| Pine Nuts..... | 7 @ 8 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week

MOORE, FERGUSON & CO.
WOOL, GRAIN, FLOUR</

and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|--------------------|--------------------|----------------------|
| Flour, 4-sks..... | 113,472 | 3,168,660 |
| Wheat, cts..... | 63,398 | 8,032,295 |
| Barley, cts..... | 36,416 | 3,817,546 |
| Oats, cts..... | 8,783 | 463,974 |
| Corn, cts..... | 5,921 | 219,708 |
| Rye, cts..... | 1,100 | 27,798 |
| Beans, sks..... | 12,854 | 465,434 |
| Potatoes, sks..... | 20,256 | 745,480 |
| Onions, sks..... | 3,331 | 83,073 |
| Hay, tons..... | 2,205 | 90,955 |
| Wool, bales..... | 242 | 49,417 |
| Hops, bales..... | 1 | 7,693 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------|--------------------|----------------------|
| Flour, 4-sks..... | 97,432 | 2,025,362 |
| Wheat, cts..... | 58,429 | 7,771,572 |
| Barley, cts..... | 9,189 | 2,688,483 |
| Oats, cts..... | 112 | 11,493 |
| Corn, cts..... | 414 | 29,151 |
| Beans, sks..... | 2,656 | 257,182 |
| Hay, bales..... | 648 | 55,822 |
| Wool, bs..... | 13,139,776 | 9,100,249 |
| Hops, bs..... | 55,616 | 908,486 |
| Honey, cases..... | 6,435 | 907,713 |
| Potatoes, pkgs..... | 1,215 | 165,929 |

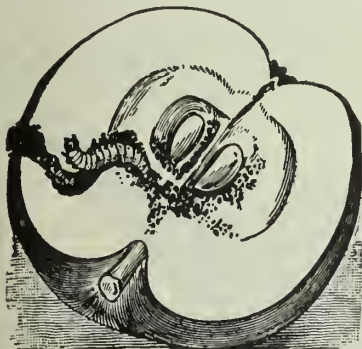
California Dried Fruit at New York.

NEW YORK, February 16.—California dried fruits, steady. Evaporated Apples, common, 5@7½c per pound; prime wire tray, 8½c; wood dried prime, 8½c; choice, 8½c; fancy, 9@9½c. Prunes, 3@8c per pound. Apricots, Royal, 5½@7½c; Moorpark, 9@11c. Peaches, unpeeled, 5@9c; peeled, 12@20c.

"The reason so many people lose their wisdom teeth early," said a dentist, "is because they do not attend to them properly. They are so far back in the mouth that the toothbrush does not touch them in the usual perfunctory cleaning, and particles of food are left there to decay. A soft cloth kept ready to supplement the work of the brush will be found of great advantage."

SPRAYING FRUIT TREES.

The question of spraying fruit trees to prevent the depredations of insect pests and fungus diseases is no longer an experiment, but a necessity.



Our readers will do well to write Wm. Stahl, Quincy, Ill., and get his catalogue describing twenty-one styles of Spraying Outfits and full treatise on spraying the different fruit and vegetable crops, which may be had for the asking and contains much valuable information.

Straw Burning Boilers and Engines.

Attention is called to the advertisement in another column of the Bay City Iron Works, Oakland, F. I. Matthews, the proprietor, has made a careful study of the important requirements of a first-class portable boiler and engine for the special use of farmers in the threshing field. While more particularly adapted to the burning of straw, other fuel can be used equally well. For details and prices see ad. and send for circulars.

SUFFERERS FROM COUGHS, SORE THROAT, etc., should be constantly supplied with "Brown's Bronchial Troches." Avoid imitations.

"What is a prodigy?" asked the youngest boarder. "A prodigy is something rare," explained the eldest boarder. "Yes," Ashbury Peppers chimed in. "A rare steak would be a prodigy in a boarding-house."—Cincinnati Enquirer.

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People who are fond of sea bathing in summer should know that in winter a most effective and yet simple substitute for sea water is a cup of rock salt dissolved in warm water, and added to the bath. A warm salt bath of this kind is the most refreshing tonic for an exhausted body. But don't go out of doors after taking it; just before going to bed is the right time.

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| IV. Vegetable Soils of California. | XXIII. Lettuce. |
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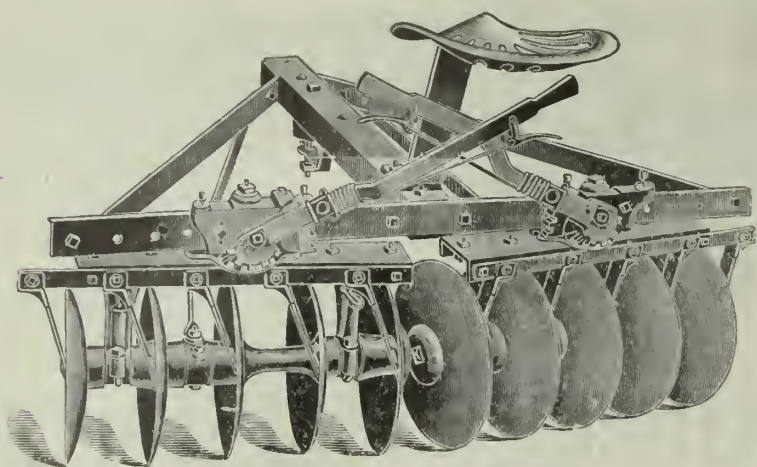
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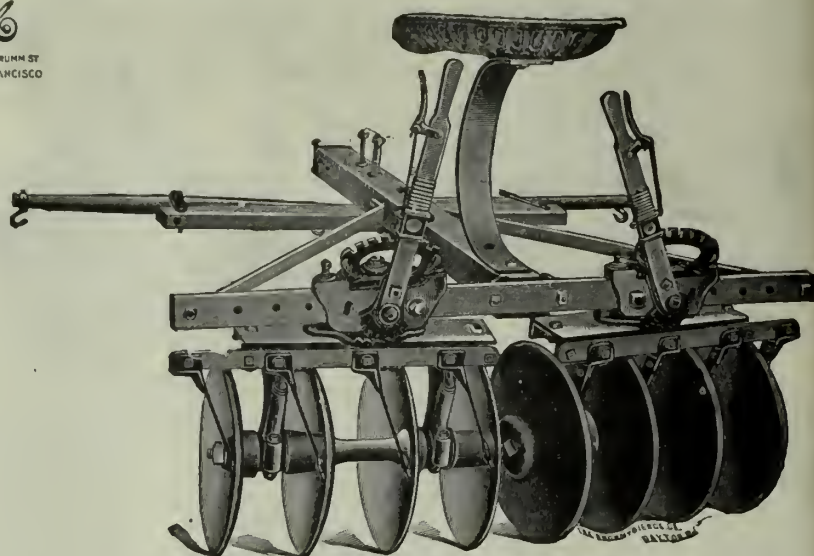
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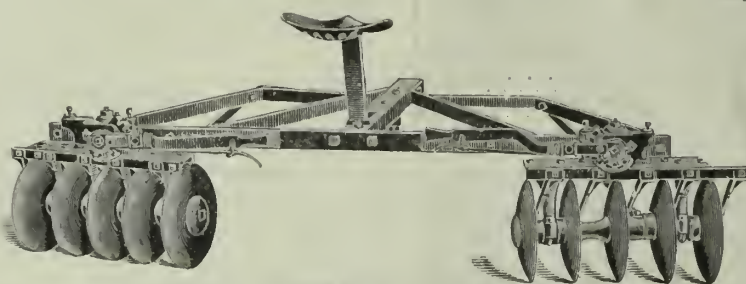
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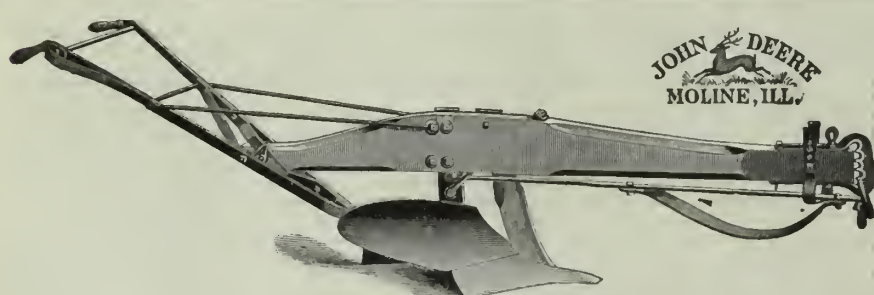


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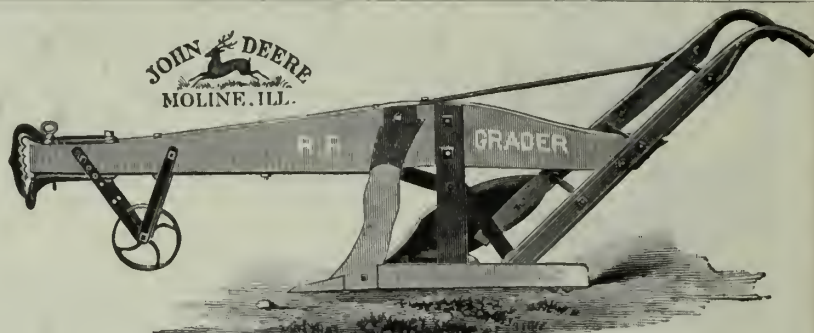
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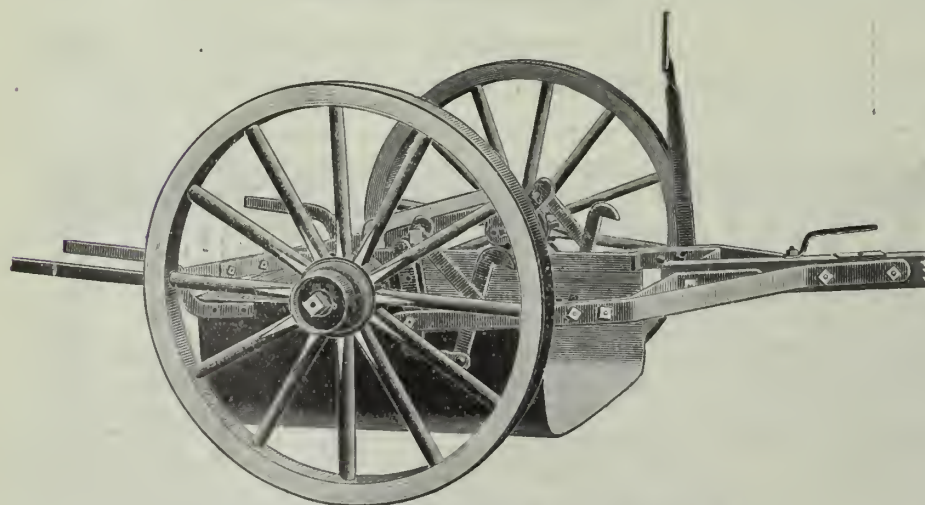
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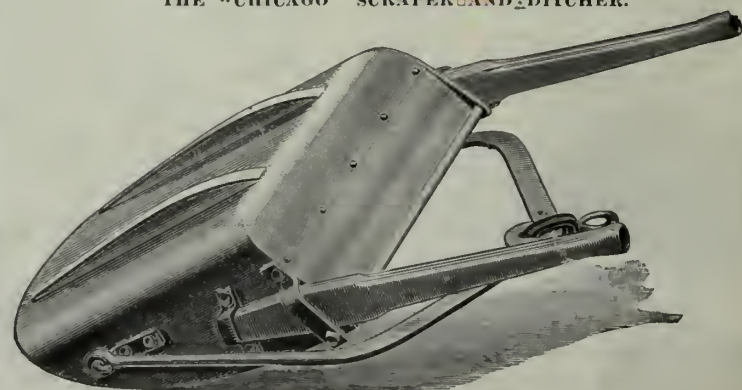
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 9.

SAN FRANCISCO, SATURDAY, FEBRUARY 26, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

Bean Threshing.

The view presented herewith represents bean threshing by machine in Ventura county. The scene is hardly as picturesque as the old style of threshing floor upon which the beans were beaten out by the feet of horses and the crush of wagon wheels passing repeatedly over them. But even the old threshing floor has recently lost much of its picturesqueness. The frequent use of disc harrows upon the layer of beans, as gathered from the field with hay rakes, etc., has in itself too many suggestions of novel implements to be entitled to rank as antique. As a matter of fact, the old things are passing away in beans as in other affairs of life. At the present time, in the chief bean districts, the threshing floor has been largely superseded by the steam threshing outfit like that shown in the engraving, which is reproduced from our new book on "California Vegetables." The work is done for many growers by one outfit which goes from farm to farm and threshes according to contract price as the grain threshers do. The bean grower has, however, a standing advantage over the bean thresher which the grain grower does not usually possess. A threshing floor can be easily made, and animals usually had at low



Chalco.

America.

Apple.

NEW HYBRID PLUMS BY LUTHER BURBANK OF SANTA ROSA.

New Plums by Luther Burbank.

Recently we alluded to Mr. Burbank's latest announcement of his "new creations" in fruits and flowers; herewith are shown engravings of new plums which he offers for trial for the first time this year.

The new plum named "Apple" was the most notable in a lot of some 25,000 plum seedlings and was heavily loaded with fruit when only two years old. It was named "Apple" from its close resemblance to that fruit in form, color and rare keeping quali-

ties. It averages about 2½ inches in diameter, and is striped and mottled like Imperial Gage until nearly ripe, when it turns to a deep reddish purple. The superlatively rich, high flavored, sweet or subacid flesh is rather firm, pale red, with marblings and streaks of pink; nearly freestone. Its parentage is not known, except that it is a second generation seedling from some cross-bred seedlings, and no doubt Satsuma and probably Robinson are in its line of ancestry, though it is greatly superior in all respects. It ripens in Santa Rosa soon after "Burbank," and sometimes keeps a month or more in good condition. The tree is a fine, strong grower, with peculiar, light brown bark.

The third of the group, "Chalco," is a peculiar triumph of the hybridizer's patience. It is a Simoni-



BEAN THRESHER AT WORK NEAR SANTA PAULA, VENTURA COUNTY—FROM "CALIFORNIA VEGETABLES."

ties. It averages about 2½ inches in diameter, and is striped and mottled like Imperial Gage until nearly ripe, when it turns to a deep reddish purple. The superlatively rich, high flavored, sweet or subacid flesh is rather firm, pale red, with marblings and streaks of pink; nearly freestone. Its parentage is not known, except that it is a second generation seedling from some cross-bred seedlings, and no doubt Satsuma and probably Robinson are in its line of ancestry, though it is greatly superior in all respects. It ripens in Santa Rosa soon after "Burbank," and sometimes keeps a month or more in good condition. The tree is a fine, strong grower, with peculiar, light brown bark.

rates, so that the bean thresher is continually in competition with the threshing floor, and if his price does not meet the growers' views he cannot get contracts. But the advantage is not all on the side of the grower. Although the floor is cheaply used, there is considerable risk about it, for a shower of rain on the floor during threshing is very likely to result in stained beans, which have to be sold for what they will bring as stock feed. The floored product is also apt to contain too much dirt, and it is harder to sell "doby" at bean prices than it used to be. On the whole, the machine-threshed bean is brighter and cleaner, and recent improvements in the thresher have reduced the bean-cracking to a minimum. The business-like outfit shown in the engraving may therefore be taken as a characteristic feature of our great bean industry in its present form.

Burbank cross and the fruit shows the two species very well combined. Mr. Burbank says of it: "After twelve years of experiment in crossing the unique, handsome, fragrant Chinese plum—*Prunus Simoni*, often called the 'Apricot plum'—with the Japanese and American plums, we now offer the first fruit of this long and very expensive work; expensive because *Prunus Simoni* not only bears no viable seeds here, but the pollen, too, is almost wholly absent. From these two circumstances it has been supposed, probably without foundation, that the Apricot plum may itself be of natural hybrid origin." The "Chalco" ripens before "Burbank," is large, flat, like a tomato, and almost as stemless as a peach. It is deep reddish-purple, with very sweet, firm, fragrant, yellow flesh. It is a long keeper. The tree is strong grower and prolific.

"America" is a giant plum, a seedling of "Robinson," a native American, crossed with the Japanese "Botan." The fruit is larger than the average

Burbank cross and the fruit shows the two species very well combined. Mr. Burbank says of it: "After twelve years of experiment in crossing the unique, handsome, fragrant Chinese plum—*Prunus Simoni*, often called the 'Apricot plum'—with the Japanese and American plums, we now offer the first fruit of this long and very expensive work; expensive because *Prunus Simoni* not only bears no viable seeds here, but the pollen, too, is almost wholly absent. From these two circumstances it has been supposed, probably without foundation, that the Apricot plum may itself be of natural hybrid origin." The "Chalco" ripens before "Burbank," is large, flat, like a tomato, and almost as stemless as a peach. It is deep reddish-purple, with very sweet, firm, fragrant, yellow flesh. It is a long keeper. The tree is strong grower and prolific.

PACIFIC RURAL PRESS.

Office, Clark Building No. 330 Market St., San Francisco, Cal.
Telephone, Davis 711.

TWO DOLLARS PER YEAR IN ADVANCE.
Advertising rates made known on application.

Any subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

Registered at S. F. Postoffice as second-class mail matter.

ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, February 26, 1898.

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The Week.

Weather and Crops.

Since our last writing the central and northern parts of California have had a light wetting—not enough to wholly reassure the country, but sufficient to keep things going for another week or two. We are nearly ten inches short of our normal water supply for the season, but as yet neither fields nor orchards are suffering seriously, and with the usual spring rains all crops will do well. There is no reason to doubt that rain will come, but under the peculiar circumstances of the season it is not surprising that apprehension is very general.

As we write (on Wednesday afternoon) the clouds are gathering in the southeast, the storm winds are loose and all indications point to a general down-pour within twenty-four hours.

The following data for the week ending 5 A. M. Wednesday, Feb. 23, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---------------------------------------|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | 2.24 | 21.11 | 35.97 | 30.15 | 32 | 61 |
| Red Bluff..... | .31 | 9.60 | 20.94 | 18.08 | 36 | 62 |
| Sacramento..... | .20 | 7.04 | 14.47 | 13.97 | 38 | 62 |
| San Francisco..... | .44 | 6.30 | 17.76 | 16.63 | 43 | 62 |
| Fresno..... | .12 | 3.35 | 8.58 | 6.69 | 32 | 74 |
| San Luis Obispo..... | .08 | 3.96 | 17.36 | ..... | 32 | 72 |
| Los Angeles..... | .00 | 4.11 | 14.43 | 11.81 | 42 | 72 |
| San Diego..... | .00 | 3.38 | 10.11 | 7.44 | 42 | 72 |
| Yuma..... | .00 | 1.26 | 4.87 | 2.58 | 40 | 72 |

Cattlemen's Convention in Oregon.

On Wednesday, Thursday and Friday of last week Pendleton, Oregon, was the scene of a convention of stockmen representing the range interests of Oregon, Washington, Idaho and western Montana. It was the first meeting of the kind ever held in the Pacific Northwest and was a surprising success in all ways. Some hundreds of cattlemen were in attendance and there were also present no less than twenty leading railroad men. The main address, outside of technical matters, was given by the Governor of Oregon. The President, Prof. Spillman of the Washington Agricultural College, in taking his seat, said in part: "The native grasses seem to be gradually dying out, and it becomes necessary for us to find others that are more vigorous. It is somewhat peculiar that species of grass native to one region should, when introduced elsewhere, prove superior to native grasses there, and yet this is true. Familiar examples of this are seen in the spread of certain weeds, such as the Russian thistle and

prickly lettuce. At Pullman we are growing some 300 varieties of forage plants, from every part of the world. Several of these are of great promise. It is too early for us to recommend many varieties for extensive sowing, but we are in a position to point out those most worthy of trial. Tall meadow oat grass, orchard grass and Russian forage grass have been tried extensively in Oregon and Washington, and are found to be generally adapted to the prevailing climatic conditions and to most varieties of our soils. Farmers generally should give them a trial."

In the three days of the convention a series of papers on range themes were delivered, the more important of which will be given in these columns later on.

The Produce Markets.

Wheat stands in the San Francisco market just where it did at our last writing, and may be said to be steady—this statement applying to the real or selling market. In the speculative pit there have been the usual ups and downs in sympathy with Chicago; but the situation there is wholly dominated by the Leiter deal and little or no attention is paid to it by actual buyers and shippers of wheat. Their measure of value is the London market and operations here, everywhere excepting in the speculative board, are based upon this standard. There has been more or less business doing during the week, the supply keeping well up with the requirements of the trade. There is no means of telling how much wheat remains in California, but it is evident that it is still a long way to the bottom of the bin; and it is further evident that a good share of the holdings is still in the hands of the producers.

All the feed cereals are stiff, due to apprehensions of a dry season. Hay keeps up to recent high figures and millstuffs share the same influence. A general rain would weaken the whole line.

In dried fruits business is slow. Even in prunes there is less movement. For apples and pitted plums there is fairly good inquiry on Klondike account. First and last the Alaska demand will make a good figure in the season's sales. The last steamer going north carried 27,000 pounds of fruit, and this is about the average quantity taken by each boat. For this trade only such stone fruits as have had the pits removed are in demand, carriage being too costly for unpitted goods. It is this fact which renders prunes almost uncalled for in the Alaskan trade.

About the most notable fact of the week is a heavy advance in Lima beans, due to weather conditions, on the one hand, and to the policy of the Lima Bean Association on the other. This is largely what the street calls a "weather proposition."

In the livestock market beef is steady, hogs suitable for packing are higher and mutton is higher.

The Miller Test Case.

As the RURAL goes to press on Wednesday there is just coming to trial at San Jose the celebrated case in which Henry Miller, the cattle king, is testing the ordinance ordering the destruction of cows condemned as diseased by the county veterinary surgeon. The Santa Clara inspector, some time back, condemned sixty-four head of Miller's stock, but Miller delayed action by getting out a temporary injunction; and it is upon motion to make this injunction permanent that the case now goes to court. Miller consented to the inspection of his herd, but declined to sign the consent to have the cattle killed if found to be affected with tuberculosis, and it was to prevent the inspector from killing the animals without consent that the injunction was granted. Inspector Spencer has tested 5211 cows and killed 800 found to be diseased. Out of 165 cows on one of Miller & Lux's ranches fifty-seven were found to be diseased.

Cloverdale Citrus Fair.

All reports agree that in the citrus fair held during the past week Cloverdale quite outdid all previous efforts. And there was good reason for it. The fair was the sixth in annual series; experience had taught the managers and exhibitors how to do good work; the fine new pavilion gave special facilities for effective display; and last but not least, the season's crop of fruits is the finest ever produced in the Sonoma citrus district. The whole county took an active interest in the matter, contributing both to the bountiful display, to the volume of the crowd and to the many social features which made not the least pleasant part of the occasion. The climax of interest was on Tuesday—Washington's birthday—which was especially set apart by the management as "Sonoma Day." Never in the history of Cloverdale, writes a local correspondent, were such throngs seen on the streets as crowded the thoroughfares on this, Sonoma day at the Orange Fair. Fully 5000 people visited the fair, the pavilion being packed. The entertainments took on a patriotic air, and patriotic music and speeches were the order of the day, while

100 school children, with flags flying, marched to patriotic strains. A speech was made by E. W. Davis, secretary of the Board of Regents of the State University. The address in the evening was made by O. O. Webber of Santa Rosa.

The committee on prizes was composed of J. L. Blain of San Francisco, E. D. Sweetzer of Santa Rosa and D. M. Winans of Petaluma, and the awards were as follows:

1. Best display of Navel Oranges—Captain H. M. Haney.
 2. Best artistic display of Citrus Fruits—Miss Lena Bush.
 3. Best artistic display of Oranges—Frank Yordi.
 4. Best display of Lemons—Italian-Swiss colony.
 5. Best artistic display of Olives or Olive Oil—Brush, Williams & Co.
 6. Best artistic display of Wines—Cloverdale Wine Co.
 7. Best artistic display and quality of Dried Fruits—A. N. Clarke, Dry Creek.
 8. Best Twelve Navel Oranges—H. J. Crocker.
 9. Best Twelve Mediterranean Sweets—Mrs. L. J. Cooke.
 10. Best Twelve Joppa Oranges—M. Menihan.
 11. Best Twelve Japanese Oranges—G. Hagmayer.
 12. Best Twelve Malta Blood Oranges—W. Caldwell.
 13. Best Twelve Villa Franca Lemons—H. Hubbard.
 14. Best Twelve Lisbon Lemons—H. J. Crocker.
 15. Best Twelve Sicily Lemons—C. C. Carriger, Sonoma City.
 16. Best display of Limes—J. Shaw, Kenwood.
 17. Best Pickled Olives—Dr. A. M. Coomes.
 18. Best Olive Oil—J. A. Kleiser.
 19. Best display of Nuts—J. C. Holloway.
 20. Best display of Citrons—G. W. Prescott.
 21. Best display of Deciduous Fruits—A. N. Clarke, Dry Creek.
 22. Best Artistic Display—Brush, Williams & Co.
 23. Best display of Canned Fruit—John Elden.
 - 24—Best display of Jellies—T. J. De Hay.
- Special Mention—M. Menihan, navel oranges; Wm. Caldwell, golden charriot; Mrs. A. Bently, artistic umbrella; L. A. Domine, Call building; G. Hagmayer, pagoda; Arthur Cooley, Ferris wheel; Herald George, cut flowers; G. B. Baer, Pomolo. Special mention was also made of the following exhibits: Wood carving, China, embroidery and paintings.

Free Market Convention.

A convention of representatives of producing interests is in session, as we write on Wednesday, considering ways and means of securing the long-projected free market in this city. As we go to press the proceedings have not advanced beyond the stage of organization, and full report will have to be deferred until next week. Mr. Edward F. Adams is chairman of the meeting and Mr. Victor L. O'Brien secretary. Representatives are in attendance as follows:

Sonoma County—E. D. Sweetzer, president of the Sonoma County Horticultural Society; J. H. Hutchison, M. B. Mack, H. Meacham, C. D. Grover, S. P. Peck, C. Nissen.
Fresno County—D. T. Fowler.
San Francisco Farmers' Club—C. E. Post, E. F. Adams, I. J. Truman, T. V. O'Brien, E. A. Denicke.
State Farmers' Alliance and Industrial Union—J. A. Simons.
Pajaro Valley Fruit Exchange—A. N. Judd.
Tulare Grange—W. J. Fulgan, C. J. and Mrs. C. J. Berry.
Stockton Grange—William L. Overhiser.
Contra Costa County Fruit Union—Prof. John Swett, Samuel Potter, Dr. J. H. Caruthers.
Petaluma Grange—C. D. Groves, S. G. Peck.
Southern California Fruit Exchange—George Frost and F. S. Story.
San Joaquin County—J. D. Huffman, W. C. Daggett, A. M. D. McIntosh.
Santa Clara County Farmers' Club—F. M. Richter, W. P. Cragin and Judge Lewis.

Weather and Crops.

SUMMARY OF THE REPORT OF THE U. S. WEATHER SERVICE FOR THE WEEK ENDING FEBRUARY 22, 1898.

The first general rain since February 6th fell on the night of the 20th and morning of the 21st. The prolonged want of rain at this season of the year had given rise to anxiety among farmers concerning the crops. Not only has there been a marked deficiency in rainfall during this entire season, but the latter portion of the last season was dry. At San Francisco the rainfall since April 1st to date has been only 7.40 inches—a deficiency of 10.91 inches. The present rain, therefore, is very welcome and will prove to be of the greatest benefit. With the exception of the extreme north coast, the rainfall for the week is much below the normal. South of the Tehachapi there has been a trace of rain, and the deficiency is from six-tenths to eight-tenths of an inch.

The temperature has been below the normal in the northwestern portion of the State, about normal on the central coast and from 3° to 5° above the normal in the interior.

Grain, particularly growing grain and feed, were feeling the effects of continued dry weather. The present rain came in time and prospects are much brighter; provided the usual spring rains occur, the crops will probably be abundant. Fruit trees are beginning to bud in favored localities. Almonds are blossoming and apricots are in bud.

SHASTA.—Warmer and light showers.
TRINIDAD.—Half inch of rain and warmer. Grain growing rapidly. Almonds in bloom.
GLENN.—Farmers busy plowing. Light showers Sunday evening. Growing grain is doing nicely.
SOLANO.—Trees beginning to bud. Grain doing well. Sufficient moisture in ground for the present. Good invigorating rain fell Sunday night, just what growers most needed.
SACRAMENTO.—Showers Sunday night; crops in fine condition. Growing grain and hay show well.
YUBA.—Warm with rain. Plowing and spraying now on; prospects of large crop.
SAN JOAQUIN.—Grain growing well; more rain needed.
MARIETTA.—Growing grain looks well, but more rain needed.
STANISLAUS.—Rain. Crops doing well. Farmers still seeding with faith in late rains.
KERN.—Grain and feed growing rapidly. Warm weather dried the land. Monday cooler with good showers.
KINGS.—Dry. No change since last report.
TULARE.—Light frost on 18th and 19th; light rain on 21st. Crops

ing well. Need rain for wheat. Almond and apricot trees in bloom.
SONOMA.—Crops of all kinds doing well; some plowing in orchards and vineyards.
NAPA.—Weather of past week mild with light frost. Outlook fair for good grain and hay crop, and full fruit yield. Still plowing.
ALAMEDA.—Prospects very much improved.
SANTA CRUZ.—Crops doing very well.
SAN MATEO.—Dry north wind on 18th and 19th; heavy showers on 20th, beneficial to crops.
SANTA CLARA.—All crops doing well. Early fruit trees in bloom; apricots are blossoming. Rain of 20th of universal value.
SAN BENITO.—Grain and feed had about stopped growing. Fruit outlook good.
MONTEREY.—Rain needed badly for crops. Showers on 21st. Crops growing well at present.
SAN LUIS OBISPO.—Farmers are still cropping, but need more rain. Grass is very short.
SANTA BARBARA.—Continued warm, dry weather. Hay is being cut on low ground; indications of short hay crop.
VENTURA.—Every one wishing for rain. Much barley and beans shipped; also oranges and lemons. Little damage by late frosts except to lemon crop.
ORANGE.—Cloudy and cool. Rain needed badly to save small grain.
SAN BERNARDINO.—Valleys badly in need of rain.
RIVERSIDE.—Dry and warm. Indications that grain crop will be light on account of scarcity of rain. Little advance in growth of grain and feed.
SAN DIEGO.—Nothing seems to be suffering, but soon will be. Almond trees are blossoming and orange and lemon trees are making a good new growth. Many oranges still on the trees.
EUREKA SUMMARY.—Conditions favorable for stock, grain and dairying. Sown grain growing slowly. Fruit holding back well. Light snow on high ranges.
LOS ANGELES SUMMARY.—Warmer; continued dry weather affecting grain, stops plowing and cultivating orchards; lands under ditch being irrigated; peaches and apricots in bloom.

AGRICULTURAL REVIEW.

CALIFORNIA.
Contra Costa.

McNear's new mill at Port Costa will have a capacity of 1000 barrels of flour per day. Oil will be used in the furnaces. The mill will be seven stories high and its exterior will be made of corrugated iron.

Fresno.

ORANGE GROVE PROFITS.—The net profits from some of the orange groves in and about Fresno was this year as follows: Berry & Wallace, from about 55 acres, \$6100; D. R. Evinger of Sanger, from 10 acres, \$2050; Mrs. Slosson, from 20 acres, \$3300, with upwards of \$800 worth, mostly lemons, still on the trees; William Hazelton, from less than 1½ acres, \$700. In nearly, if not every case cited, the purchasers of the crop paid the entire cost of picking and packing, and allowances have been made for cultivation, so that the above figures are net profit. Had the entire acreage been Washington navel the figures would have been considerably higher. Many other orange groves near Centerville and elsewhere in this county yielded handsome profits to their owners, but the actual amounts are not at hand. * * * The early ripening of oranges in Fresno county cannot be too much dwelt upon. In and about Centerville this year they began to pick oranges as early as November 10th. No other orange country in the world where navel oranges can be raised can compare with this. In Florida the crop ripens early, but besides being handicapped by occasional ruinous frosts Florida cannot successfully grow the Washington navel. This leaves the December trade for navel oranges entirely in the hands of the growers of Fresno and Tulare counties and a small district north of Sacramento.—Fresno Expositor.

A BIG SEEDLING PLANT.—Contractor Eugene H. Smith, who has the contract to build a \$15,000 addition to the plant of the Phoenix Seeded Raisins and Packing Company, has begun the preliminary work and in a short time the building will be well under way. It will be erected alongside of the company's present structure and will face on Front street. A. Gartenlaub of the firm, who has been East purchasing new machinery for the seeding annex to the establishment, is expected to return this evening. It is said that the Cox seeder, a Fresno invention, will be used in the high establishment.—Fresno Republican.

Humboldt.

UNHEALTHY PLACE FOR BIRDS.—The Times was informed a week or more ago that the pheasants turned loose on Price creek recently have been furnishing the coons in that locality with choice eating lately. This county, infested as it is with varmints along the innumerable water courses, is a very bad location for the pheasants, as they fall easy victims to the pestiferous coon, skunk and wildcat. Those liberated on Bear river have not been heard from for a long time, and those on McDiarmid prairie have also disappeared. It seems as though Humboldt was surely unhealthy for this class of game.—Arcata Union.

Kern.

ROAD SPRINKLING.—Two members of the Board of County Supervisors go to Visalia to inspect a sprinkling outfit owned by Tulare county. It consists of a large wagon and tank with a pump and gasoline engine fastened to a platform at the rear of the tank. From wells alongside the roadside the tank is pumped full of water, the team resting three or four minutes, the time required for the purpose.—Echo.

Kings.

ALL the preliminaries in the matter of the projected cannery at Hanford have been accomplished, including the selection of a site. The cost of the establishment will be \$25,000, and it will employ 500 persons when in full operation.

CREAMERY.—Frank and Harry Peacock have decided to establish a creamery in the Dallas district, and will begin the erection of a building near the Dallas schoolhouse this week. * * * This is the first creamery or butter factory of any consequence ever planted in this county, and the Dallas district is a splendid location for it. With its broad acres of alfalfa, its artesian and natural gas wells, it is the center of cheap pasture, cheap water, fuel and lights. With so many of the elements of manufacture of one of life's necessities, it should establish a coast reputation in dairying.—Hanford Sentinel.

Los Angeles.

THE EVIL AT ITS SOURCE.—The Horticultural Commissioners have found a way, they think, to practically put an end to the shipment of scale-infected fruit. They have promulgated an order to the effect that no unclean fruit can be removed from an orchard. Heretofore the custom has been for a buyer to visit an orchard, purchase the fruit and clean it at his packing house. The new rule will put an end to that, for it expressly forbids the fruit from being removed from the owner's grounds until it has been cleaned. So, as buyers cannot afford to keep washing plants in every orchard, they will, of course, refuse to buy fruit that is not free of insect pests. Inspectors will watch all fruit that is picked and are directed to order it dropped on the spot if after an examination the fruit is not all right. Orchardists say that the hauling or shipment of fruit that has not been cleaned to packing houses has been in the past the principal cause of the spread of fruit pests. Inspector Richardson of this district is continuing the work of digging up and burning old and infected trees which have so long disgraced many charming spots in the city.—Pasadena Star.

A REGULAR THING.—The regular annual drought scare is

making some progress on the coast, but its spirit is likely to be dampened before many days have passed. The greatest alarm, as a rule, immediately precedes a good, refreshing, nourishing, invigorating rain. We are all prone to worry about the things that never happen. The weekly crop and weather bulletin, issued yesterday, is quite in the nature of an assurance that all is well, with a fair prospect of an improvement.—Los Angeles Herald.

HORTICULTURAL INSPECTOR RICHARDSON, says the Pasadena Star, has been earning the gratitude of the whole community by digging up or causing to be dug up and burned old or disgraceful looking trees, which were to be found in too many lots in this city. Very many lots which are the property of non-residents were ornamented by orange and lemon trees which from lack of care had long ago ceased to be ornamental. These trees were almost universally infested with scale and not only offended the eyes of both residents and tourists, but made it practically impossible for a man disposed to keep his trees and shrubbery free from insect pests to do so. Everywhere that there was an old or unsightly tree Mr. Richardson either got the owner to take it out or to let him do so. Not that he has removed all such trees, but he has taken out 1466 of them, from ninety-eight lots, during the past few months.

Napa.

TOBACCO CULTURE.—Mr. Chas. A. Wetmore says tobacco growing thrives in California wherever introduced. He says that there is nothing to which small farmers could turn their attention so advantageously and with so much profit, and urges that from eight to twelve men make the experiment here this year by each planting one acre. There are several farmers in the Livermore valley growing tobacco successfully, one having seven acres devoted to it. The average yield is from 1200 to 2000 pounds to the acre, according to the soil. In Napa valley the yield should be about 1500 pounds to the acre. If the tobacco is properly cared for and cured, and of fair quality, it can readily be sold at 15 cents per pound. Thus an acre of land would bring a return of \$225. One man can properly care for two and one-half acres of tobacco and it would keep him busy four months in the year. One man with two or three boys, one horse and a plow could plant and care for five acres. The chief expense is in the erection of drying sheds, and in this valley the empty wineries could readily be utilized. Mr. Wetmore says if a few men would plant an acre each, pool their crops and market them together, sharing the expense of curing, they would find the experiment profitable and worth repeating.—St. Helena Star.

Orange.

FRUIT MEN ORGANIZING.—Very hearty encouragement has been given the proposition of organizing a deciduous fruit growers' association in this vicinity. Secretary White of the Chamber of Commerce, who has had the matter in charge, states that the names of growers representing 200 acres of deciduous fruits and 300 acres of walnuts have been secured to the paper of organization.—Santa Ana Blade.

ORANGE COUNTY FRUIT GROWERS are in correspondence with Secretary Lelong in the hope of having a fruit growers' meeting at Santa Ana under the auspices of the State Board. The meeting, if held at all, will be some time in April.

INVOKING THE RAIN.—A letter from Santa Ana under date of 18th ult. says: "The rainfall in Orange county since the first of the year has not amounted to as much as an inch, and farmers are getting frightened as to the crop outlook. Clark Brothers, proprietors of the Los Alamitos beet-sugar factory, in the western part of the county, around which a vast area of land is being planted to sugar beets, commenced operations on Wednesday to cause a rainfall by artificial means. A Chicago rain-maker employed by them has two carloads of explosives with which he is making experiments by sending the combustibles into the air with the aid of a balloon and setting them off at a high elevation by means of electricity. The rain-maker has not been successful so far in bringing on a downpour, although a slight sprinkle fell each day and a small shower occurred several miles east, in the foothills. This is the first experiment of the kind ever made in this part of the State, and the result of it is being watched with anxious interest by the farmers."

San Bernardino.

THE SIZES OF ORANGES.—When certain sizes of oranges are ordered in, it is convenient to know the dimensions of the fruit required. The following measurements are given in diameters, and when any size is called for pick one-eighth of an inch larger than the number designated, as the fruit contracts in sweating before being packed.

To remember the sizes, you will observe that a seedling orange three inches in diameter will pack 150 in a box. Each size varies one-eighth of an inch each way. The Washington navel, owing to its shape, packs one eighth of an inch smaller in all sizes.

| | Number. | Inches. |
|------------------------|---------|---------|
| Seedlings..... | 250 | 2½ |
| "..... | 216 | 2½ |
| "..... | 200 | 2½ |
| "..... | 176 | 2½ |
| "..... | 150 | 3 |
| "..... | 126 | 3½ |
| "..... | 112 | 3½ |
| Washington Navels..... | 250 | 2½ |
| "..... | 216 | 2½ |
| "..... | 200 | 2½ |
| "..... | 176 | 2½ |
| "..... | 150 | 2½ |
| "..... | 126 | 3 |
| "..... | 112 | 3½ |
| "..... | 96 | 3½ |

Australian navels same as Washington navels. Budded seedlings same as seedlings.—Colton News.

THE GOPHER BOUNTY PROJECT.—Although the San Bernardino County Commissioners made light of the petition asking that a bounty of 2½ cents be paid for gopher scalps, the movement has not been given up. Speaking of the attitude of the supervisors the Colton Chronicle says: "The bounty on gopher scalps met with but little favor by the Supervisors, although it was probably the most numerously signed document of the kind ever before presented before the board. The only member who seemed to be in sympathy with the gopher-plundered citizens was Supervisor Cooley, but the balance of the board seemed to think the raising of gophers was an industry that should be encouraged and voted to that end. We very much regret it. There are numerous expenditures that can be stopped and the money used for gopher scalps." The Ontario Observer comes out strong as follows: "This week an extensively signed petition was presented to the Board of Supervisors asking for a bounty on gophers. It is claimed by the petitioners that the groves and alfalfa fields are suffering severely from these troublesome pests. The compensation proposed by the petitioners, 2½ cents, is probably too small to cause a generally aggressive attack on the wily and elusive gopher. Five cents would be none too large a bounty to bring about a general crusade against such annoying and destructive pests as the gopher and squirrel. The owner of a large tract of land here is paying a gopher bounty of 10 cents a head, and is quite willing to continue discharging that rather costly premium on their slaughter. It is only just that a general tax should be imposed for the extermination of gophers, squirrels and like pests, as a large area of unimproved land owned by outsiders is the breeding place of such animals, and the owners of such property should be compelled to pay some of the expense of exterminating pests which, after finding a lodgment in such land, invade contiguous improved prop-

erty. It is not at all probable that any serious objections will be raised by the taxpayers to any action of the supervisors tending towards clearing the orchards and fields of this county from dangerous pests of any description." The Times-Index of San Bernardino joins the chorus as follows: "We claim that the farmer who raised alfalfa was entitled to protection as well as the fruit men. A bounty of 2½ cents would be in any event a small sum. It could be met by lopping off an unnecessary commissioner or bug inspector. During January the county paid for protecting orchards against scale \$1060.83, segregated as follows:

| | |
|------------------------------------|----------|
| Salary of three commissioners..... | \$199 40 |
| Salary of three inspectors..... | 147 45 |
| Chemicals, etc..... | 713 98 |

"The supervisors appropriated \$1000 \$3 in one month for the protection of orchards, but refused to fix a bounty of 2½ cents on gophers to protect the alfalfa fields. The sentiment in the county in favor of the gopher bounty is practically unanimous. The fruit men favor it as strongly as the farmers."

San Joaquin.

AFTER THE BUGS.—Inspector Tucker of the Horticultural Commission is still at work inspecting orchards and also fruit shipped to this place either by rail or water. Yesterday two boxes of oranges from Los Angeles, consigned to W. Millitz, were condemned, and this morning he condemned four boxes of lemons sent by Minnker & Willbanks of San Francisco to the Valley Commission House of Stockton. Both oranges and lemons were affected with scale, and all were sent back. Mr. Tucker also reports that the district in the northern part of town, which was inspected by him and found to be in very bad condition, is being pretty thoroughly sprayed by the property owners, nine out of every ten having sprayed. Mr. Tucker's orders just at present are to inspect trees in the country, which of course takes him away from the city. As soon as he finishes with the country, he will complete the work of inspecting in the city. There are two spraying outfits working in Stockton now, but they report that at places where there has been no inspection they are unable to get anything to do, being informed by the owners that the place has not been inspected, and they don't know whether spraying is needed or not.—Stockton Mail.

Santa Barbara.

POULTRY EXPERIENCE.—A local man thus writes to the Santa Maria Times: "From Jan. 1 to Nov. 1, 1896, I kept an average of eighty hens, and sold during that time \$80 \$2 worth of eggs net. The feed for the chickens cost, (was worth) at the market price, \$27. From Jan. 1 to Dec. 1, 1897, I kept an average of 400 chickens (350 hens) and sold \$205 worth of eggs net. The feed for the year cost \$145. In both cases we made no account of the eggs consumed at home. I am well aware that the above record does not look so enticing in print as some others I have seen, but I believe if all would keep an accurate account, instead of depending on their memory, estimates, etc., that the above will come up to a full average, as the hens were high-grade of the egg-producing variety. It will be readily noticed that the record is in favor of the smaller flock—more than double the profit. And another thing I wish to speak of is the fallacy of expecting to profit by raising chickens to sell, if a person is raising the egg producers, as our Leghorn breeds will not net the producer more than 25 cents each on account of size, and it certainly costs more than that amount to feed them to maturity, while to raise larger breeds for table quality with the expectation of getting equally as good egg producers, which is the chief object, is as philosophical as to expect to get a first-class roadster and first-class draft horse combined in one article."

Santa Cruz.

PAJARO VALLEY FRUIT NOTES.—This is Pajaro valley's banner apple planting year. * * * No Eastern apple shipments the past week. The season is practically over. * * * Two carloads per day to San Francisco seems to meet the apple wants of the metropolis, and Pajaro valley is furnishing that supply. * * * The Pajaro valley apple packers should have one or more central houses in San Francisco, through which to handle their fruit shipments. Variations in returns, and the belief that returns of sales are far less than were the actual sales, are strongly pointing to packers that the relief they wish will come only through their efforts.—Pajaronian.

Ventura.

THE celebration in honor of the erection of the Colonia beet sugar factory in this county, held at the factory grounds on last Saturday, was a grand success in every respect. One of the largest multitudes ever assembled in this county for many years participated in the festival. The crowd was larger than was anticipated by the committee of arrangements, and for this reason they were unable to feed all. It is estimated that over 4000 people were present.—Ventura Independent.

OREGON.

STRANGE DISEASE OF GOATS.—Fred Peipiot, who has a home-stead near Greenleaf, in the mountains, a few years ago purchased a few Angora goats as an experiment. He now has about 130 goats, and is making more off them than any of the settlers in that neighborhood make off cattle or agricultural products. Observing Peipiot's success, several other settlers purchased a few goats each, and goat meat is becoming quite a common food along Lake creek. The goat fleeces weigh about half as much as good sheep fleeces, and sell for twice the price of wool by the pound. Goats are hardy animals, but within the last few weeks an unknown disease has attacked those in this vicinity. Peipiot having lost nine, Frank Eldridge several and Fred Peil one. The diseased animals have a good appetite up to the time of death. For a day or two a fullness and softness is observed about the head and body. Then diarrhoea is added to the symptoms, and the goat dies. Treatment stops the diarrhoea, but the disease is always fatal. The only abnormal thing to be discovered on dissecting the carcass is a watery fluid under the skin, more especially about the cheeks. Nothing is known regarding the nature of the disease or its cause.—Letter from Greenleaf, Oregon.

GOOD DEMAND FOR FRUIT TREES.—Nurserymen say that there is a good demand for fruit trees from all over the country. Apple and prune trees are especially in demand, but there is a call for all kinds, better than for several years past, from all sections from southern Oregon to Idaho, and it looks as if all the nurseries in this region were to be cleaned out. Prices have been low of late, and many nurserymen have let their stock run down, but those who have taken care of their nurseries and kept up a stock will now get their reward. The price for young trees is 4 to 6 cents each, according to age. Buyers ordinarily want yearling trees, but two-year-old trees, which have been headed back and shaped, are in good demand and are not large enough to be injured by transplanting.—Portland Oregonian.

BUTTER FOR THE KLONDIKE.—Butter would soon be cheaper here were it not for the great demand for the Alaska trade. The amount of it that is packed daily in two-pound tins in this city for the north is very large. It used to be bought in small firkins by Klondikers, but now they all want it in two-pound tins. Only one tin has to be opened at a time, and the butter in tins, properly packed, will keep indefinitely; but when a firkin is opened, before it can be used the bottom begins to be "frowy." The two-pound tins of fresh butter packed in boxes are in great demand for the Alaska trade, and any number of boxes go away on every steamer.—Oregonian.

HORTICULTURE.

Practical Notes.

TO THE EDITOR:—At the Farmers' Institute here in December last the question was asked, "How can we get rid of Johnson grass?" There was no one who could give a satisfactory solution to the problem. I have been studying the subject some and have experimented a little, and think I have discovered a practical method of eradicating this troublesome pest. My theory is that the roots should be cut off some distance below the surface of the ground, raked up and burned, and that this operation should be repeated until all roots left in the ground must perish. If they cannot put forth some growth they must finally die. The implement for this work should be made similar to the nursery tree digger, with elevator fingers attached similar to those of a potato digger. I have tried just such an implement and find that when the grass is burnt off, this will bring the roots to the surface and leave them clear of the dirt and exposed to the sun and drying winds, which would seem sufficient to kill any vegetation.

Brush After Pruning.—At this season of the year, when the horticulturist is pushing to get his pruning over and ready for plowing ere the ground dries, a suggestion about disposing of the brush might benefit some one. I will say to those who know of no better way, burn it in your orchard, but shield the two trees that you burn between with a tin or sheet iron shield tacked on light wooden frames with two wire hooks at the back to attach them to the tree.

Orchard Plow.—I have been trying to study out some kind of machine to plow an orchard clear up to the trees, that will break all the ground plowing one way. This is very desirable in orchards which are irrigated. I have one or two plans that may be practical but have not tried them. Will some of the RURAL readers give some suggestions in this line?

Sweet Potatoes.—Our sweet potato growers are not very jubilant over the results of their last year's crops, prices having ruled too low throughout the season for a fair profit. Notwithstanding this, it seems there will be fully as many planted again the coming season. Many improved methods are now employed in growing and saving them. A machine drawn by a pair of horses and manned by a driver and two boys plants a row as the team walks. In digging the potatoes another machine with four horses and two men will enter the vine-covered field and at once lay the tubers out on top of the ground.

So it will be probably some day with harvesting sugar beets. The machine which digs them will top them at the right place.

Root Knot.—There have been some discoveries made in this locality concerning some of the causes of root knot in fruit trees. Peach trees transplanted from seed bed the season they sprout (i. e., young green seedlings) are very liable to develop a large amount of root knot before they are ready for the orchard. Hence they should not be grown that way.

W. T. KIRKMAN.

Merced.

FLORIST AND GARDENER.

Recent Developments in English Horticulture.

By J. BURTT DAVY of the University of California; at the Berkeley Floral Society.

There is almost as much change in the fashions of horticulture in Europe as there is in those of dress. Not only do we find a style of gardening prevalent in one country different from that of another, but each year shows a marked change in the kinds of flowers which are the favorites.

During the last few years the tendency in England has been towards a revival of interest in hardy perennial herbaceous plants, and hardy annual species have not been afforded the prominence given them some ten or fifteen years ago. Now there seems to be a reaction in favor of the latter, and our Californian godetias, clarkias, eschscholtzias, gillias, memophilas and similar plants are again finding a place in the flowerbeds.

The Old Demand for Exotics.—During the second and third quarters of this century the English garden lover had an almost insatiable craving for new plants, new genera and species, from all parts of the world. In those days travel was laborious and expensive, and those unable to satisfy their inborn British taste for new scenes and new things by journeying abroad to see them, had to content themselves by ornamenting their houses and gardens with the exotic treasures brought home by their more fortunate fellows. And so the demand for new garden plants was always greater than the supply, and a man was willing to pay well for a new and beautiful rarity for his garden. In those days it well repaid a nurseryman to keep several collectors constantly employed,

scouring the forests and plains of foreign countries for novelties. It was this enthusiasm and consequent enterprise which brought to our shores such collectors as Menzies, Douglas, Barclay, Lobb, Beardsley and Jeffrey, some of whose names are permanently attached to the native plants of our State, on account of the valuable contributions to botanical science which they made.

The times have changed, however; travel has become a common and easy thing, and with this change the demand for new species of hardy garden plants has declined, till but few people are willing to pay good or even reasonable prices for them, and nurserymen cannot longer afford to employ collectors to obtain them.

The Interest in "New Creations."—But the Englishman's proverbial love for flowers has not gone also—it has simply turned into another channel. Instead of spending time and money in growing such plants as he frequently sees in his travels, he devotes it rather to the production, or, to use the somewhat flowery terms of Mr. Burbank of Santa Rosa, the "creation," of new cultural varieties. This process involves more real skill than the mere cultivation and propagation of plants already introduced by others, and carries with it, moreover, much of the element of chance, dear to the hearts of men on both sides of the Atlantic. And so we find the most striking development in English horticulture during the last few years is that of the production of new and beautiful hybrids—orchids, cannas, begonias, streptocarpus, amaryllids, gloxinias, chrysanthemums, etc. For these, and parents likely to produce such, our Englishman is willing to pay fabulous sums, even thousands of dollars, and is able to realize a profit from the sale of their offspring after careful and judicious "crossing" and "hybridizing."

We are glad to note, however, that from this extreme there is a tendency to reaction, and that such well-known and far-seeing firms as F. Sander & Co. of St. Albans are again turning their attention to hardy herbaceous plants, both perennial and annual. These are easy to cultivate by the amateur who gardens for amusement and the love of the beautiful, and who often does not have time and money to devote to hybrids and hybridizing. There will always be a demand for this class of plants, even though it may never again attain the proportions it reached earlier in the century.

Another line in which English horticulture has recently developed remarkably is in the production and cultivation of new greenhouse plants of winter-blooming and free-flowering habits, suitable for decoration in the house or for supplying cut flowers. Begonias, hippeastrums, chrysanthemums, etc., are used largely for this purpose. The greatest demand in this line is for novelties which can be grown easily and in quantity, and which form neat and floriferous plants.

Landscaping.—As regards landscape gardening, the tendency continues to be away from the cold artificialism of a few generations ago and towards Nature's own ways. At Kew the acres of grassy knolls under the shade of trees are being beautified by the planting of small bulbous plants such as crocuses, snowdrops, bluebells, brodiaeas, etc., which are being sprinkled about by the cartload in the autumn and which in the spring form perfect masses of color. Here in California we might take a hint in this direction, our native bulbous plants lending themselves well to this form of cultivation.

California Bulbs Abroad.—There is a growing demand for California native bulbous plants in England, the beautiful Mariposa lilies having come into prominence during the last few years through the persistent, untiring energy of Carl Purdy of Ukiah, combined with the foresight and enterprise of the Messrs. Wallace of Colchester, England. No less than three first-class certificates were awarded to Messrs. Wallace by the Royal Horticultural Society the past year for new Californian calochorti.

Under Glass.—Greenhouse and stove plants are always in demand in England, and several of the best-known nurserymen—Veitch, Bull, Lowe, Sander and Williams—devote their attention mainly in this direction. I recently enjoyed the privilege of going through the establishment of Messrs. F. Sander & Co. of St. Albans. They have four and a half acres under glass, in addition to their hardy plant department, and a seed farm at Bruges, Belgium. The place was a perfect paradise for the lover of flowers and was a source of constant astonishment. Mr. Sander has made himself famous in the horticultural world as a successful importer of orchids, and employs several collectors in different parts of the world all the time. They send home only such things as they believe will sell well, and the result is that Mr. Sander's houses are filled with beautiful novelties from all round the world. Among these I was pleased to notice several new and beautiful palms and other ornamental plants from the cooler mountainous regions of the tropics, which would be well adapted to the climate of California and would be very welcome additions to our sub-tropical garden flora.

At Kew Gardens.—The English Government continues to show its appreciation of horticulture and the interests of horticulturists. The enlightened and

persistent efforts of Mr. Joseph Chamberlain, M. P., himself deeply interested in floriculture, and other gentlemen, keep the Government alive to its responsibilities in controlling the beautiful botanic gardens at Kew, and the result is that it keeps on voting money for the erection of new houses and other improvements, which do much to keep alive the public interest in flower culture. A new house for nepenthes (pitcher-plants), for Mexican plants, for filmy ferns, for half-hardy ferns, and for economic plants, and the handing over of Kew Palace for the purpose of a fourth large museum for economic plant products, show the intelligent appreciation of the British public of the commercial, educational and moral value of some \$250,000 spent annually in the maintenance of this fine botanical and horticultural institution.

Flower Shows.—I must not close without a word concerning floral and horticultural societies. These are now found in almost every district, and by their shows, awards of merit for really good exhibits, and mutual exchanges of new plants, do much or more to promote interest in horticulture than anything else. A noteworthy recent development in this line has been the offering of a prize banner by Cannell and other leading seedsmen for the best local flower show, to be competed for annually. The awards of merit and medals offered by the Royal Horticultural Society, not on the basis of the best exhibit at the one time, but only for a really first-class exhibit, has proven very satisfactory.

Plants Desirable for California.—The following, among many other interesting and valuable plants, I noted as being especially desirable for introduction into California for out-door culture:

Dracæna Sanderiana, a handsome, tall, variegated species.

Dracæna Godseffiana, new, with beautiful mottled leaves. A small plant suitable for bedding-out or as a window plant.

Pandanus Baptisti is a handsome species.

An unnamed species of *Bowenia* from New Zealand is strongly recommended as an ornamental plant.

Dracæna Goldieana, a grand species.

Lycuala, sp. unnamed, exquisite.

Dracæna cannaefolia variegata, very hardy.

Eucharis Amazonica, the largest flowered of introduced *Eucharis*.

Paullinia thalictrifolia, from Peru, a handsome, cut-leaved climber, well adapted for California.

Two new cultural varieties, one red and one white, of *Lapageria*, decided improvements on the old sorts.

Mr. Sander suggests that California might well supply New York with cut flowers of *Lapageria*, for which there is a large demand now supplied chiefly by France and England. There they have to be grown under glass, while we can grow them out of doors. Carefully packed in soft paper, they travel beautifully and command a good price.

Gloriosa superba, of this and *Calla Elliotiana* and *Eucharis Amazonica*, California ought to supply the world with the finest tubers, if means of cheap transportation could be found.

Philodendron Selloum is a handsome foliaged plant for the conservatory, equal and in many respects superior to the commoner species.

The newer and more handsome *Anthuriums* of the *Andreanum* class are worthy of careful and thorough trial, on account of their fine foliage and handsome, long-enduring flowers.

A. Andreanum magnificum is a fine form, with large leaves and handsome flowers.

Tecoma Smithii, Mr. Sander strongly recommends as a valuable climber, suitable for outdoor culture in England.

The Mexican terrestrial orchids, *Laelia anceps* and *Mormodes pardinum*, are worth trying for outdoor, greenhouse or even window culture.

A new yellow hibiscus is a taking novelty.

Mr. Sander has a good collection of *Nepenthes* and says they could easily be sent out to California, as they travel well.

An unnamed species of *Macrozamia* and of plume asparagus. Mr. Sander says there is a great demand for twelve-cent clumps of ornamental asparagus and of *Eucharis*, which could be readily grown in California and if shipped at a low cost and in bulk would sell well.

Acalypha Sanderiana is an exceedingly handsome, hardy, ornamental, perpetual flowering plant, which can be raised from either seeds or cuttings. Mr. Sander suggests that California could probably supply the market with seed.

Acalypha Godseffiana is a good plant for table decoration, both in pots and for picking for vases.

Solanum Seaforthianum is a good, free-flowering climber, not equal to *S. Wendlandii*, but probably more hardy in middle California than the latter.

Sibatum Scheedii is a fine tree fern, probably hardy with us.

Ceroxylon Nevusii is a very distinctive palm, which would prove hardy with us and be a valuable acquisition to our gardens.

Dipladenia atropurpurea, from Brazil, would probably thrive near Santa Barbara and Los Angeles.

A genuine hybrid between *colocasia* and *caladium* was of much interest to me.

Brexia Madagascariensis would be a handsome

addition to the Santa Barbara exotic flora, but it is not likely to thrive out of doors elsewhere. As a stove plant it is highly recommendable.

Stenoglottis longifolium is a hardy orchid, which would be good for seed growing and shipping.

Sander's new pillar begonias are very attractive and should prove a great success in California. The other valuable plants noted were: An unnamed species of *Leea*, *Dracaena Broomfieldii*, new species of *Maranta*, *Arisæma fimbriata*, *Alocasia Sanderiana*, *Cordyline lentiginosa*, a new and very taking *Retinospora*, *Cocos Yattaei* (well adapted to Californian culture and of very pretty habit), *Bourgainvillea Sanderiana*, a new species of *Chamærops* (which would probably succeed in California as well as *C. excelsa* does, and which would be an acceptable addition to our gardens), *Phoenixophorium Seychellarum*, *Encephalartos Altensteinii*, a new variety of *E. Kaffir*, *Amazonia punicea* (from British Guiana), *Dracaena Kewensis*, *Furcraea gigantea variegata*, *Heliconia illustris rubricaulis*, *Tacsonia militaris* (brilliant scarlet), *Calla Elliottiana*, a good yellow "calla lily" and *Phoenix Roebellii* (perhaps the most beautiful of date palms).

ENTOMOLOGICAL.

New Facts About the Codlin Moth.

The time is at hand to make preparation for the campaign against the codlin moth. There have recently been brought to light some new facts about this very old foe of the fruit grower. A little more than a year ago we published some statements by Prof. Slingerland of Cornell University, showing that the old conceptions of the life history of the insect were largely erroneous. During 1897 careful study was continued by Prof. Card of the Nebraska experiment station, and the result is a better understanding of the work and habits of the insect. It is shown, also, that its life history is somewhat affected by local climatic conditions, and that really it must be locally studied in the different parts of the country. For the interest of our apple growers we shall compile from the two authorities named above some important facts.

The Egg.—Prof. Slingerland says: "During the past two years I have seen hundreds of the eggs on apples in New York orchards and have never yet seen one on or down in between the calyx lobes on the so-called blossom-end. We have seen eggs near the calyx, in old curculio scars, near the stem, and have found what appeared to be codlin moth eggs even on the leaves of the tree. Most of the eggs we found were glued to the skin, apparently without much choice as to location, on the smooth surface of the fruit. During the past year I found the eggs in Nebraska, and, instead of being laid in the calyx, found that the eggs are laid almost exclusively on the upper surface of the leaves, in the orchard, though in confinement they may be laid anywhere. They are usually found on leaves of a cluster associated with an apple."

When the Eggs are Laid.—There has been considerable difference of opinion on the important question of when the eggs are laid—that is, at what stage in the development of the fruit are they laid. The records on this point vary from "just before the petals fall" to "nearly a month after the blossoms dropped." The common notion has been that the eggs were laid soon after the blossoms fell, but apparently with no definite evidence to support it. When Koebele and Wier first found the eggs in California, the fruit was about an inch in diameter. In 1889 Gillette noted in Iowa that no worms hatched until nearly a month after the blossoms fell, and the apples were then an inch in diameter. Both in 1896 and 1897 Prof. Slingerland was unable to find any eggs on either early or late varieties of apples in orchards at Ithaca, N. Y., until the fruit had reached nearly an inch in diameter; this was during the last week in May, and the blossoms had been off for a week or more and the calyx lobes had drawn together. Thus, from the only definite evidence we have, one cannot escape the conclusion that, in the northern half of the United States at least, most of the eggs of the codlin moth are not laid until a week or more after the petals of the blossoms have fallen.

The First Acts of the Worm.—The worm appears about a week after the egg is laid, apparently, says Prof. Slingerland. The newly-hatched apple worm spends but a few hours of its life on the skin of the fruit. Whenever it enters at any other point than at the calyx, it usually soon begins to tunnel toward the core. However, 75 per cent or more of the young worms enter the fruit at the blossom end, and observations indicate that they spend several days feeding around in the calyx cavity. When the worms hatch, the blossoms have been off for two weeks or more and the calyx lobes have drawn tightly together, forming a covered cavity in the blossom end of the apple. This is a very important phase in the habits of the apple worm, as we shall see when we come to discuss remedies.

How Many Broods in the Year.—From the evidence

Prof. Slingerland concludes that there is one well-defined brood and usually a more or less complete second brood of the codlin moth yearly in the New England States, New York, most of New Jersey and part of Canada. Two well-defined annual broods occur in Michigan, Illinois, Iowa, Missouri, Kansas, Nebraska, western Ontario and Colorado, with sometimes a partial third brood in some localities and seasons. In California, Oregon, New Mexico and in the South there seems to be three broods annually. We should have more definite observations on this point in many States. It is not possible to define these different regions by parallels of latitude, for the variation in the number of broods depends upon differences in climate, temperature and altitude.

Brief Resume of the Life History.—The codlin moth appears in the spring about the time blossoms are falling from apple trees, and after a few days glues its tiny scale-like eggs onto the skin of the young fruit or even the adjacent leaves, where they hatch in about a week. The little apple worm usually finds its way into the blossom end, where it takes its first meal and where it remains feeding for several days, finally eating its way to the core. In about three weeks it gets nearly full-grown and makes an exit tunnel to the surface, closing the outside opening of the tunnel for a few days while it feeds inside. Emerging from the fruit, it usually makes its way to the trunk of the tree, where it soon spins a cocoon under the loose bark. Usually the first worms to thus spin up in June or July soon transform to pupæ, from which the adult insect emerges in about two weeks, and eggs are soon laid from which a second brood of the worms hatch. In most of the more northern portions of the United States only a part of the worms of the first brood pupate or transform to moths the same season, but in the central, western and southern portions there is a complete second brood, and in some portions even a third brood of the worms annually. In the fall all the worms spin cocoons wherever they may be, either in the orchard or in storerooms, and remain curled up in them as caterpillars until spring opens, when they transform, through the pupa, to the moth, thus completing their yearly life-cycle.

The Remedies.—Our authorities both agree that the poison must be put in the calyx of the apple and that this should kill 75 per cent of the first brood. Prof. Slingerland thinks that later spraying with Paris green will be likely to accomplish little with the later broods, because of the impossibility of getting the poison into the calyx. He would rely upon banding the trees for the later broods.

Prof. Card believes in more spraying, based on the fact that he finds so many eggs laid on the leaves. He makes the following suggestions for treatment:

1. Spray with Paris green, as generally recommended, about one week after the blossoms fall, or in time to get the calyx cups well filled with the poison, so that they may close over and hold it there.
2. Spray with Paris green and Bordeaux mixture combined, or with kerosene emulsion, about June 1st, or, better still, observe carefully and apply this when the eggs are being laid in abundance on the leaves, which at Lincoln occurs at about this date. Laboratory experiments indicate that kerosene emulsion will be more effective than Paris green at this time.
3. Scrape the bark and place paper bands around the tree about the last of June, when the larvæ are beginning to leave the apple to pupate. Examine these two or three times a week apart, and destroy the insects found beneath them.
4. If these methods are not wholly effective, owing to the proximity of neglected orchards or from an unusual abundance of moths, later spraying with either Paris green and Bordeaux mixture or kerosene emulsion may do some good, but apparently cannot be expected to be wholly effective. Late spraying with arsenites is much more likely to injure the foliage than earlier applications, and, if other methods are thoroughly followed, it will probably be unnecessary.
5. If larvæ are still found in the apples in any considerable numbers toward the end of the season, place paper bands about the tree about Sept. 1st, or a little earlier. Leave them there until the fruit is gathered from the orchard; then remove, and destroy the larvæ hibernating beneath them.
6. Screens placed over the windows and doors of the cellar or rooms where apples have been stored will prevent those larvæ which are taken in with the apples from escaping as moths in the spring.

It will be noticed that both Prof. Card and Prof. Slingerland agree that according to their observations only the first spraying with Paris green is effective because that is the only one which can get the poison into the calyx or eye of the apple. Opposed to this is the fact that in California there is abundant evidence that two or more later sprayings with Paris green are effective in some way, because late apples and pears can be largely kept from worms by subsequent use of Paris green, while one spraying applied early does not save them. Early apples can be saved by one spraying but later ones have been largely lost when only one spraying has been done.

Peach Moth and Prune Fertilizing.

TO THE EDITOR:—Will you please tell how to prepare and how and when to apply the kerosene emulsion used by the Santa Clara orchardists for the extermination of the peach moth? Will it exterminate?

How much muriate of potash does Commissioner Ehrhorn apply to an acre of prune trees to increase the size of the prunes, and when does he make the application? L. C. G. Lincoln.

TO THE EDITOR:—In reply to Mr. L. C. Gates of Lincoln, I will say that kerosene emulsion, if well prepared, will kill 75% of the peach moth larvæ now

in the crotches of the trees. The following is the formula:

KEROSENE EMULSION.

Coal oil (150° test), 4 gallons.
Washing soap, 1 pound.
Water, 2 gallons.

Prepare as follows: Dissolve the soap in water by boiling, and add this boiling hot to the kerosene. Churn violently for five minutes by pumping the liquid back upon itself or by dashing the liquid back and forth from one can to another. The liquid should have the consistency of cream. Take one part of emulsion to nine parts of hot water and apply warm. If the buds are starting, it is best not to spray the young wood. The larvæ are now in the crotches of the old wood and will leave there as soon as the leaves unfold.

Prune Fertilizing.—In regard to the quantity of muriate of potash used per acre, I will say that one pound to the tree has given very good results. It all depends on the age and condition of trees, also on the crops which have been harvested. It should be sown broadcast over the orchard before the rains. At present muriate of potash is out of the market, and the best substitute is sulphate of potash. If the soil is at all alkaline, the muriate should not be used at all. In this case, the sulphate of potash is the right material.

EDW. M. EHRHORN,

San Jose, Feb. 17, 1898. Hort. Commissioner.

FRUIT MARKETING.

Capay Valley Fruit and Its Marketing.

By M. HADEN STITT, at the University Farmers' Institute at Guinda.

No California industry has grown to such vast proportions, or is being brought to such a scientific basis, as is the growing, packing, shipping and marketing of California green fruits. With the almost perfect appliances we have for the carrying of our fruits to the far-off markets, we can load our fruit here, where it is nearly fit for the table, have it on the road from six to twelve days, and it will then open up in condition to sell to our advantage. In this beautiful valley we can, with thorough cultivation, raise early shipping fruit that will compare favorably with any other district in the State.

To do this we must give our trees a careful pruning—cutting out all the dead wood, leaving nothing but healthy, bearing twigs. Spraying comes next, which has much to do with making our fruit as near perfect and free from worms and borers as possible, it being the most important item in the carrying qualities of fruit. We must then see that our ground is worked in proper shape, and left loose and loamy for at least 5 inches deep. If we have peaches or any of the Japanese varieties of plums, we must see that they are thinned so as to raise fruit in quality, and not quantity.

Varieties.—The standard varieties of shipping fruits in this valley, I think, are plums, prunes, peaches, pears, apricots and Tokay grapes.

Plums.—In the plum line the ones that are adapted to our soils are the Royal Hative, Duane's Purple and the Japan sorts, of which are the Wickson, Burbank, Abundance, Red June, Simon's and Kelseys. The Wickson and Burbank rank first in beauty, bearing, shipping and selling qualities; but any one of the six is a good mortgage lifter. The Tragedy prune grows to perfection here, will hang in the tree longer and retain more sugar than in any other locality. We can hold our Tragedys until our Sacramento river and Vacaville friends have shipped their last one. It is reliable for shipping, as it will carry from six to twenty-five days. During the great railroad strike of 1894 we had some sell in Boston on the twenty-fifth day after they were packed; and our agent reported them in perfect condition. They sold rather low last year, for the first time in their history, which was due to our dry spring, causing all of them to be of split pits.

Peaches.—The best shipping peaches are the Alexander, Hale's Early, St. John, Crawford, Decker, Foster and Tuscan clings, named in the order of ripening. Any of them is a first-class shipper, though we should be careful and have them well colored. Pack nothing but the best, put them in a neat, clean package, nicely branded. If you have small, well-colored ones, pack in crates rather than in boxes. The past season we found they sold as well as the larger ones on account of the color.

Apricots.—I have only had experience here with the Royal apricots, and have found them good bearers, nice size, fine shippers and a good paying crop if well taken care of.

Pears.—Our valley is the banner district of the State when it comes to raising Bartlett pears for profit. As with our Tragedy prunes, we can hold them on the trees to our advantage. When we are shipping our pears they are about the only tree fruit leaving the State, and can be loaded in with Tokay grapes, and bring on an average of \$2.50 for

a forty-pound box. Any one planting an orchard in this valley should not omit Bartlett pears, as they have the brightest future of any fruit in this section.

Grapes.—I don't think Tokay grapes will pay except on the best bottom land, where they will grow heavy foliage to protect the berry from the hot rays of our summer sun.

Profit in Reputation.—It remains with us to establish a reputation in the East for Capay valley fruits. We must band together, all pack as perfectly and as nearly alike as possible, take care not to put in anything but sound, well-colored fruit, and have our box lumber clean and nicely branded. When packing, care should be taken not to bruise it in the handling; use clean paper and have it well wrapped. If we are diligent and patient we can gain for ourselves a reputation second to none and equaled by few. For fancy fruits, New York and Boston are the most profitable markets; but, take it day in and day out, any of the Western markets, such as Chicago, Cleveland, Kansas City, St. Louis, St. Paul, Omaha, Denver and numerous other cities, are the best markets we can find. In these cities it is more apt to reach the middle class, with whom we find our best friends. If we would have our lumber stamped at the mills, under one brand, it would be the most feasible way of advertising our fruits. I would advise having all our lumber stamped "Choice Capay Valley Fruit." Let our watchwords be quality, neatness, size and attractive packages.

THE SWINE YARD.

Selection, Care and Management of Hogs.

NUMBER I.

By ELIAS GALLUP of Hanford at the University Farmers' Institute at Selma.

It is all-important that we have a good foundation to build on. Without a good foundation the structure is liable to totter and fall before it is completed. I will consider the boar the foundation.

Desirable Points in a Boar.—The indispensable qualifications for a good breeding boar are a good, wide head, deep through the neck, broad, well-sprung rib, long in body, heavy ham, well let down in flank, good feet and legs, good constitution, a glossy coat of hair, and good action. What I mean by good action is one that can move about with ease. I have no use for a lazy, sluggish boar. They usually are poor feeders and their offspring are apt to inherit their unthrifty habits.

On my farm I have two males, and they can stand on their hind feet and look over the top of a fence 5 feet high with ease, and either of them will weigh over 600 pounds.

Since the boar is half of the herd, it is of the utmost importance that in selection the closest attention should be given not only to the characteristics of the animal, but to his immediate ancestors.

Transmission of Traits.—Every breeder believes in the transmission of quality and form from sire to offspring, and knows that defects are transmissible equally with merits.

A long list of illustrious sires does much to establish the value and reputation of an animal. The value of the crop of pigs will depend in a great degree on the quality of the boar by which they were sired.

If he is well bred, well shaped and proportioned, he will do much to overcome defects in the sows, and his pigs will be of good form and stamina and uniform excellence.

If the boar is of mixed breeding and has a good deal of daylight under him, some of his pigs will inherit one or more of his shortcomings. No two of the litter will look alike.

If you have the least reason to believe him constitutionally affected, do not use him. To use a sickly sire is to invite disease into your herd; consequently you lose your job, and then you can join Grover Cleveland and go fishing.

Importance of Selection.—The time is now at hand in these days of short margins that the swine breeder should be very particular in his selections of his breeding stock. I am sorry to say this is not the case.

Stock is purchased which is but suited to the circumstances of the buyer for the time being. This loose system of selections is undoubtedly profitable to the seller, but will prove hard on the buyer.

The best advancement of the swine interest is attained only under a system that permits the survival of the fittest.

A few years of close work in selection, taking only the best individuals, would be of great value to our swine interests. Swine breeding, as in other improved stock breeding, requires that only full blood sires should be used.

A few crosses may make as good looking animals, but when put to the test as breeders they almost invariably prove a failure and show the scrub stock in their progeny. It is not so important what breed

as that the sire invariably be a full blood and possess good characteristics of most important features, which are perfection of form, sound health, good style, fine action and good pedigree.

Individualism in Hogs.—I will frankly say to you, gentlemen, that I cannot give any specific treatment or any certain kind or quality of food to be used by everybody on every boar. There are no two hogs alike in their requirements or their habits, nor any boar that should be handled twice.

The surroundings that are just right for one hog are just wrong for the others. I might say that the surroundings that were adapted to the hog in 1896 are just wrong for 1897. When I say surroundings I mean the lot he is kept in—its isolation from or in connection with other lots where hogs are kept, the feed trough, the house he sleeps in, etc., all these are very necessary.

Good Hogs Spoiled by Bad Treatment.—My twenty years of experience in breeding and selling thoroughbred swine has taught me that it is an undeniable fact that many who pay a liberal price to obtain a boar that suits them afterwards treat him in such a way that they derive but small benefit from the investment. One of the most common modes is to shut him in a small pen, where he is deprived of exercise and fed upon the richest of food that the farmer can afford. Lack of vitality and of virility are the results. The other mode is to turn him with an unlimited number of hogs, to fight and fret and tease until he has become the meanest, most ungainly, unthrifty hog on the place. Either of these extremes must be avoided and a more rational method pursued, or the best results cannot be secured. While too close confinement is bad, it is not so bad as to roam at large among the other hogs on the farm, where he is as much out of place as a stallion running among your horses.

Mr. Gallup's Methods With Boars.—I have for the last twenty years kept two, sometimes three, large males. Each has his lot enclosed with a strong fence 5 feet high, with posts 4 feet apart and barbed wire between each board. These yards are situated on each end of the piggery, with a pen inside and one small pen on the outside, and when he gets, as you might say, up on his mettle, I can close the door and let him remain until he becomes better behaved. I have owned and kept several different males, and they never got cross or ugly. They are an animal that you cannot subdue by whipping or punishment of any kind. Commence to whip and you will find you will have just what the hog enjoys, a fight, and he will forever have a grudge against you. I once sold one of my old males and he was taken away, and I afterwards called at the farm and his owner informed me that he had become unmanageable, was in one lot, and no man on the farm dared to go near him and drive him out into the other lot, where they wished him to run. I walked out in the field where he was, called him by name, sat down and waited for him to come, which he did. The owner was surprised to see the hog so glad to see me. I gave the owner a short lesson, which was to take something for the hog to eat, to go ahead and not try to drive him.

Separate Quarters Desirable.—Always keep your males separate from the other hogs, except when in use. That is the only successful way to manage such an animal. Aged boars are generally looked upon as unpleasant to keep, especially if you have made a mistake in the training and they have become vicious and disposed to use their tusks; but they are certainly less dangerous and troublesome than the gentlest bull or stallion, while, of course, none of them are intended for household pets or dooryard ornaments. A fence high and strong enough to hold the other hogs of the farm cannot be depended on to keep the boar. It is much the best to keep him from the first in an enclosure which will afford him no practice in the art of breaking out. There is no part of the swine business that the average farmer neglects and makes mistakes in as much as the care of his breeding boar; hence the reason I have dwelt so long on that subject, and if you had sold as many as I have and seen how they were afterwards managed, you would excuse me for dwelling so long.

Get the Keynote.—In conclusion on this part of the subject, I will say that the breeding boar is the keynote to the whole business. If you fail in your keynote, you can sing and will sing your song with sorrow. Always give your boar good food, wheat bran and middlings made into a slop, mixed with dish water from the kitchen, green grass, refuse fruit from the orchard. Avoid feeding pumpkins, citrus and pit fruit; the last named are injurious. A handful of common wood ashes, and now and then a little sulphur, have a tendency to keep him in health. It is not the balance ration that the farmer has to look after in this matter as much as the balance side of the ledger.

The Brood Sow.—In selecting the brood sow it has been a common practice to choose one much larger and a great deal coarser in its makeup than the male. My twenty years' experience has taught me that is wrong. To secure uniformity in the future crop of pigs which every farmer knows is very desirable when he comes to put them on the market, you must have the boar and sow nearly the same type or

style. The attainment of a uniform type in our hogs is of vital importance, but, after all, type and other characteristics are of little value unless, after we have attained them, we have a hog capable of producing profitably; and here is where we must begin to judge the brood sow. While it should be kept in mind that the ultimate end of the hog is the pork barrel, and that the best hog is the one that goes into the pork barrel with the most profit, it should be recognized that the primary purpose of the brood sow is to grow the best and the most pigs at the least expense. In looking for this qualification we must begin with the maternal and milk-giving functions.

Treatment of the Sow.—The sow is a milk-giving animal and should be treated as such. Her value as a breeder will very largely depend upon her milking qualities, for every farmer will agree with me that the best way to feed the pigs is through the sow. In the first place, the sow should not be over fat at breeding time, but should be gaining in flesh, thrifty and strong. I do not agree with many that the brood sow should be kept thin in flesh. I believe in liberal feeding, plenty of grass and other muscle-forming food, with exercise. I want her fat at farrowing time, not for the sake of fat alone, but for the additional strength it gives her for the severe task that is to follow. To raise a large litter of pigs requires more milk than the average cow gives to raise her calf, and milk that is 80 per cent richer in protein or flesh-forming elements and 30 per cent richer in fat. Here is something to think about. We see every day sows that are mere skeletons with scrawny litters tugging at them for their own miserable existence.

The fat sow will have a surplus to draw upon for the support of her litter, in addition to the feed that she is able to daily convert into milk.

The good milking sow or cow draws upon the surplus at the right time, and instead of giving the accustomed word of warning against the fat sow at farrowing time, I want to advise you farmers of this institute, if you want fat pigs at weaning time, or, in other words, if you want to do the best by your sows and litters, and in the interest of profit and economy, to keep clear of the poor sow at farrowing time.

It is essential, of course, that the flesh be judiciously put on. I would have the sows fed on milk-forming and flesh-forming foods and a run on green grass, where she can have plenty of exercise. If she does not take sufficient exercise, compel her to in some way, as exercise at this time is the key to health and bodily vigor.

(To be Continued.)

THE APIARY.

Notes on California Practice.

At the recent convention of beekeepers in Los Angeles there were discussions upon practical points which have been outlined by Secretary John H. Martin in a report furnished to the *American Bee Journal*. We take some which seem of most interest:

The Best Section for Comb Honey.—Mr. Geo. W. Brodbeck exhibited honey in the new no-bee-way section, and pointed out the advantages of the same, viz., that the section appeared better filled and that more of them could be packed in a case. The disadvantages were that the combs were too near in contact with each other when packed in a case, giving inducement for miller-worms to work, and if the face of the comb was not perfectly even there was liable to be abrasion and leakage. From a side view the section appeared to be light weight.

M. H. Mendleson had used the Danzenbaker or tall section, and had excellent success in producing a first-class honey and selling a portion of it for a good price. He proposed to use it exclusively in the future.

Long-lived Honey.—Under the head of the keeping qualities of comb honey, Mr. C. S. Stubblefield said that he had kept white sage honey for three years without detriment to the honey.

Natural vs. Artificial Swarming.—Mr. Mendleson said that if his bees swarmed freely he let them swarm, but if they did not then he resorted to division.

Mr. McIntyre desired to prevent swarming, but if he wished to increase he usually let the colony swarm, then removed the hive from which they issued, and made as many nuclei as there were good queen cells. The swarm that had issued was returned to the old location, and put into a hive filled with foundation as soon as the queens were laying in the nuclei, or even before the nuclei could be built up with brood from other colonies that had swarmed. In this method good queens were secured and a rapid increase made. Ten from one could be easily made. J. K. Williamson said that he could make twenty-five colonies from one by the nucleus plan, and have them all strong enough to winter. It, however, required a long season. He usually made his increase on a diminishing honey flow.

Moving Bees.—In the process of moving bees Mr.

Mendleson used a wagon upon which he could carry 200 colonies, but for long-distance moving it made the load too top heavy, and he usually put on only 150. The springs on his wagon would bear a burden of six tons.

Mr. Brodbeck preferred to move bees in lighter loads and travel faster. He desired to so move his bees as to prevent night travel as much as possible.

Foul Brood.—Mr. Mendleson, foul brood inspector for Ventura county, said that the sure-cure remedy was the total destruction of the colony. He had burned a large number of colonies and their hives. There is no chance for an annihilated colony to spread the disease.

H. E. Wilder, inspector for Riverside county, said that one cause for the spread of foul brood is in the apathy of beekeepers. The State law will not allow inspection unless a complaint is made, and beekeepers are careless about making complaints.

Mr. Cowan said that in England in many districts

the bees had all died from the disease. It was virulent because many beekeepers had no knowledge of the interior of the beehive. There were bees in churches and other inaccessible places which were liable to spread the disease. The church bees were being removed, and in this thorough way of treating it the disease was much better under control than formerly. Mr. Cowan believed in destroying the hive and the frames, for a germ of the disease would live in a crevice of a hive for several years; and if at any time it became exposed the colony was sure to become inoculated.

Mr. Mendleson favored a law to prevent the moving of a foul-brood apiary into a location where there was no foul brood. A person in moving bees should be compelled to secure a certificate from the foul-brood inspector, guaranteeing his bees to be in good condition.

It was demonstrated that the disease could be cured if it was handled in a thorough and systematic

manner. Mr. Touchton said that the cure should be in the hands of an experienced person, for a remedy in the hands of such a person was all right; but in the hands of a novice it was many times worse than useless. The washes that were recommended were salsoda and lye; the latter would take off paint, and ought to penetrate the most obscure crevices of the hive.

The Best Beehive.—Mr. Brautigam said that the manipulation of bees for the highest profit depended more upon the man than the hive.

Mr. Hatch said that he had kept bees in Wisconsin, Arizona and California, and had found that if the beekeeper wants a bucketful of honey he must have a large hive.

Mr. Martin said that he uses the Heddon hive. The regular Heddon hive is made to take eight frames, but he uses ten frames, and finds that, by adding stories as the season advances, the hive can be enlarged to any desirable size.

The Newest El Dorado.

The present Klondike excitement will re-

the largest stamp mill in the world is shortly to be erected on one of Alaska's gold quartz mines—the Alaska-Treadwell,



120-STAMP MILL OF THE ALASKA-MEXICAN GOLD MINING CO.



AT CIRCLE CITY—ARRIVING FROM THE DIGGINGS.

sult in putting Alaska and that entire northern region a century in advance of what it would have been in point of development had the Klondike craze not come. Organized government, increased population, facilities of travel, better postal service, knowledge of the country will be among the good results of the present stampede.

On this page is reproduced from the enterprising *Mining Record* of Juneau some scenes that tell their own story. Some of the world's energy and treasure is now being devoted to the exploitation of this rich northern storehouse, and the latest and most successful appliances in gold mining are to be applied in the work. In this regard it is interesting to note that



MINERS AT SHEEP CAMP, BOUND FOR THE KLONDIKE.

on Douglas island, illustrating the extent and value of Alaska's quartz milling; and if one-half that is claimed turns out true, the placer yield of the Yukon region will rival in richness the early days of gold product in California.

The president of the Agassiz Association, Mr. H. H. Ballard, recently caught an ant near its hill, shut it up in a box, carried it 150 feet away, and set it free in the middle of a shady road. What followed he thus describes: "It seemed at first bewildered. Then it climbed to the top of a ridge of sand, erected its body as high as possible, waved its antennae for several seconds, and then started in a straight line for home."



YUKONERS IN COSTUME AT FORTY MILE.



10-STAMP MILL, JUALIN MINING CO., BERNER'S BAY.

THE HOME CIRCLE.

A Cowboy Ball.

Git yo' little sage hens ready,
Trot 'em out upon the floor;
Line up there, you cusses! Steady.
Lively, now! One couple more.
Shorty! shed that old sombrero,
Bronco, douse that cigarette;
Stop that cussin', Casimero,
'Fore the ladies! Now, all set!

S'lute your ladies, all together!
Ladies opposite the same;
Hit the lumber with your leathers!
Balance all an' swing your dame!
Bunch the heifers in the middle;
Circle stags and do-se-do!
Pay attention to the fiddle!
Swing her round and off you go!

First four forward! Back to places!
Second follow—shuffle back!
Now you've got it down to cases—
Swing 'em till their trotters crack!
Gents all right a-heel and toeing!
Swing 'em, kiss 'em if you kin—
On to next and keep a-go'in'
Till yer hit yer pards ag'in!

Gents to center; ladies round 'em—
Form a basket; balance all!
Whirl yer gals to where you found 'em;
Promenade around the hall!
Balance to your pards and trot 'em
Round the circle double quick!
Grab an' kiss 'em while you've got 'em;
Hold 'em to it if they kick!

Ladies, left hand to your sonnies!
Alaman! Grand right and left!
Balance all an' swing yer honeys!
Pick 'em up and feel their heft!
Promenade like skeery cattle;
Balance all an' swing yer sweets!
Shake yer spurs an' make 'em rattle;
Keno! Promenade to seats!

—From the Northwest.

Leah or Rachel?

The Story of a Valentine.

Did you ever think what a curious thing it would have been if Jacob, after serving seven years and receiving Leah, the undesired, and then, with constancy to appall a modern, serving his seven more for Rachel, the moon-faced and ox-eyed, and found her beauty (which must have been rather mature by that time) but a glamour, her society flat and vapid, and that only Leah—Leah, on whom he had never cast the eye of desire—was the comrade of his mind, the companion of his spirit?

John Reiver was born on the Western Reserve of Ohio more than sixty years ago, and bred in that country, and amid that pioneer civilization which gave us a Lincoln and a Garfield; and I have always maintained that there was timber for a great man in John Keiver.

In those days it used to be considered that a young man, sound of wind and limb, who was not willing to work his way through college had no desire to rise in the world. John Reiver went through Princeton, graduated with some honor and, as he was rather a hard than a brilliant student, it took him five years to do it; but it cost none of his family a penny.

On the same self-supporting basis he began the study of law in the office of Harland in Toledo, then a village. His plans were big but vague. The endurance of hardship was the boast of the youth of his day, and it seemed to him that if he only stuck to his chosen profession with the dogged constancy and fidelity which he felt was in him, accepting every privation it brought, and denying himself sufficiently, he could not fail to attain some eminence, which was none the less indefinite.

At this period of his life the society of Harland girls, the judge's two daughters, was his sole luxury and pleasure. The judge was a widower, and his daughters kept his house. Handsome, intelligent girls they were, voted a little pedantic and emancipated by the gayer young folks of the village and a hopeless problem to the village youth who might have aspired to them, since, as they were never apart, it seemed impossible to court either.

This peculiarity troubled John not at all. The three soon formed a confederacy, and grew into an intimacy closer and more continuous than their father or their own ideas would have permitted with either one separately. John took his way to the Harland home-

stead to spend his evenings pretty nearly as regularly as he ate his supper. All his plans were submitted to the girls, and discussed with the girls, before they were put into practice, and a familiar picture to the passer-by of a summer evening was that of the three young people on the porch, chatting and conversing with all the freedom of a family group.

Rachel, the larger and more dignified of the two girls, was a beauty according to the standards of the time. She had the tall, willowy figure, the drooping shoulders and the regular features then considered necessary to feminine loveliness; and these, with a high, white forehead, pencilled brows, very beautiful dark eyes, a straight, delicate nose, small, sweet mouth and a profusion of jetty ringlets shading the blooming oval cheek, made up an ensemble that might have materialized out of the steel plate of some "Garland" or "Ladies' Casket."

Leah's looks would have been more appreciated by this generation than by her own. She was of the type now conveniently called "piquant"—a charming face without one regular feature. She was a magnetic creature, a rapid and mimetic speaker, and one who never repeated a person's words without reproducing his voice and gestures. With a warm, vital temperament, she threw herself with almost passionate ardor into her pursuits. Though female lawyers were not then dreamed of, she had, through pure love of learning, read law with her father, and assisted him sometimes in complicated cases with her quick and brilliant ratiocination and feminine intuition.

She and John had many a friendly bout and argument, while Rachel sat silently by, her fine dark eyes fixed dreamily on the evening sky, or rousing herself now and then to put in a kindly word for whichever one seemed to be losing the battle. The latter was usually John. Like Aaron of old, he was slow of speech, while Leah was gifted with an Irish fluency and nimbleness of wit and tongue. John used to say, laughing, that when he had a hard case in court he came to sharpen up his weapons on her, and that if he was once able to defeat her, let his legal opponent the next day beware; he would be ready for him at all points.

But even the musty odor of the law cannot keep Cupid at bay long where three healthy, normal young hearts lie fallow to his darts; and by the time John had been admitted to the Bar and to a junior partnership with Judge Harland, he found the evenings at the Harland home, from being very pleasant and necessary to his happiness, were becoming bits of Elysium, and he recognized that he was in love with—Rachel.

There was something elusive and suggestive about Rachel that kept his heart beating unusually fast and his eyes watching her all the time, while he and Leah kept the conversational shuttle flying merrily, and she sat silent, feeling, he fancied, a bit superior to their idle chatter, but too gentle and kind to say so. He fancied a fine reserve in her silence; he wondered very much what was behind her sweet, attentive calm; he longed to know of what she was thinking when she seemed absent-minded and dreamy; he longed to hold more intimate converse with her than was possible in Leah's presence; and right here he came to the point where he could sympathize with the village youth aforementioned.

Leah was very nice. He was fond of her society, and entirely convinced that she would make a charming sister-in-law; but he would willingly have pushed her aside just now to reach his heart's desire, and he came home from his once pleasant evenings filled with baffled longing and thwarted hopes.

Matters were in this state on the 13th of February in the year of our Lord, 1855, when a storm prevented his usual call, and he sat down determined to commit his feelings and the offer of "himself, all that he had, all that he hoped for," to a valentine.

The valentine of that day was not what a flippant writer has called the

satin monstrosities of our own, "a decorated liverpad," but the real sentiments of the sender expressed to the sendee in verse more or less halting, according as his poetical abilities varied. John worked at his valentine with his usual patient industry, and by "unconsciously cerebrating" in bits of Moore and Byron, produced five stanzas that almost made him wonder if fate had not intended him for a poet rather than a lawyer. It made a warm place over his heart where he carried it next day, and sent strange, exulting thrills all over him whenever he touched it.

In the evening he went as usual to Judge Harland's. The afternoon was mild and almost spring-like, and he found Leah on the porch trying to tie up a vine that the last night's storm had broken from its fastenings.

"Let me do that," he said, after the usual greeting, "while you read this and tell me what answer the recipient is going to give me."

Leah took the folded paper and opened it; then, seeing that it was written, she carried it to a window where the candle light shone through, and standing there, read it. John was still working at the vine and thinking, when Leah's touch on his arm, and Leah's voice with a different sound in it from any he had ever heard, roused him.

"She would say yes."

He turned and looked at her, bewildered. Her small, sweet face was irradiated with a passion of feeling, and as he gazed stupidly she put her hand on his arm once more, and said, in that voice of divine tenderness:

"I say yes."

In the moment that he stood there like a man shot through, already dead, whose tense muscles hold him balanced to his fall, the mistake and all its dreadful consequences went heavily before him. He saw that she had opened the paper without looking at the address, and believed the verses and the offer they contained were for herself. Rachel's step was heard in the doorway, her hand was on the door.

"It is your sister coming," he said.

"I cannot see her to-night," and turning away, he hurried down the steps and out of the gate.

John Reiver's bed knew him not that night. He tramped the muddy streets of the village in anguish of spirit, and even wandered past outlying farms, where farmyard curs barked at him and sleeping cattle stirred with heavy breathings and faint jangling of bell as he passed. And while his unconscious feet bore him on, his mind plodded its weary round in the pit his own folly had dug for him. The suffering which his miserable blunder had entailed upon him could scarcely have been understood by a smaller mind. To a man of petty vanity, indeed, the revelation of Leah's love for himself might have been a matter for smirking self-congratulation; but to John Reiver, who united the strength of a man with the pure altruism of a woman, the revelation came with the force of a crushing blow. There seemed but one course open to him. Leah was the dearest and best of women, and he could not make her suffer for his folly; but when he came to this point his love and his altruism held a battle royal in his riven heart. Rachel, forever unattainable, seemed a thousand times more alluring than Rachel to be courted and won; and in spite of his dogged resolution to abide by his blunder, and make good his word to Leah, it was a baggard face he carried the day after his nocturnal wanderings.

When he went down to the Harland's that evening, strong in his resolution,

he was glad to find Leah at the gate. It would be easier to speak to her alone, he thought, and explain, as best he might, his strange conduct of the night before.

She had thrown a little shawl over her head, and was evidently waiting for him. He saw that she was very pale, and her face looked ten years older than that of the smiling girl who had said "I say yes." As he began to speak, she interrupted him.

"I wanted to see you before you go in," she said. "I gave Rachel your valentine." And then it came to him with a shock that of course she saw the address on it after he was gone and found out her error.

The thought of her feeling then, the sight of her suffering and evident humiliation now, pained him more than any selfish thought of personal loss had yet been able to.

Somehow this pale, broken Leah seemed to him like the ghost of some one he loved, and the sight of her thus, who was usually so confident and authoritative, broke the heart in his bosom.

"O, Leah, Leah!" he said, "I came to make it good—to ask you—"

"Don't," she answered, with more of her own manner; "that would be folly, and make three people wretched instead of one—or, rather—with a somewhat wan smile—"nobody will be wretched as it is. I gave the valentine to Rachel, and I think I am safe in saying that the answer is to be yes."

She opened the gate as if for him to pass in. "O Leah!" he said, "do you hate me?"

"No," she answered, gently, smiling a little again. "I'm going away for awhile to my uncle's, in Cleveland. 'It couldn't be very pleasant for either of us to meet frequently just now, and when I come back we will have forgotten all about it.'"

Leah to go away! Leah to forget all about him! When her love was freely offered, it seemed but a misfortune; now the thought of its withdrawal struck cold on his heart.

"Rachel is expecting you, I think," said Leah finally.

"I can't see her to-night," John gasped, chokingly, in a tumult of scarcely comprehended emotions. "Leah, you won't forget all about me when you're away, and you'll come back soon."

"Why, yes, of course," she answered him, smiling in earnest now, and speaking in the tone a mother might use to a grieving child. "I'll come back soon and we'll be the same good friends we always have been. Good-by, if you're not coming in. I shall be gone when you come to-morrow." She stretched a cold little hand over the gate, and he took it and pressed it, and went away with his heart so full of Leah and her sorrows that there was scarcely any room in it for Rachel.

I should be wrong if I said that John Reiver was not a happy man in the weeks that followed. He had won his first love, an amiable, beautiful girl, who considered him the wisest, best and most gifted of men. Her gentle homage was nectar to him, though whether nectar, as a steady thing, is an altogether wholesome or stimulating diet, may be open to question.

When the first glamour of hearing Rachel say that she actually did love him, and always had, wore away, he found that they were strangely at a loss for conversation. Rachel was very domestic, and took little interest in outside matters. When he introduced a subject, she was willing to believe he

(Continued on page 138.)

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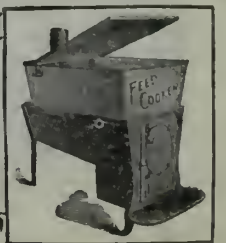
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Gems of Thought.

He lives long that lives well, and time misspent in not lived, but lost.—Fuller.

A man who does not know how to learn from his mistakes turns the best schoolmaster out of his life.—Henry Ward Beecher.

Not broken wills, not crucified wills, but consecrated wills does He seek to pour his will through.—Essays and Sermons, Samuel Longfellow.

Be patient with every one, but above all with yourself. I mean, do not be disturbed because of your imperfections, and always rise up bravely from a fall.—Francis de Sales.

Reverence is the soul of religion. When that is gone, there is little left with which God can be pleased. Where nothing is sacred, everything becomes common, even God himself.—Lutheran.

Those who despise fame seldom deserve it. We are apt to undervalue the purchase we cannot reach, to conceal our poverty the better. It is a spark which kindles upon the best fuel, and burns brightest in the bravest breast.

Thine own self will and anxiety, thy hurry and labor, disturb thy peace, and prevent Me from working in thee. Look at the little flowers in the serene summer days; they quietly open their petals, and the sun shines into them with his gentle influences. So will I do for thee, if thou wilt yield thyself to Me.—Selected.

It is this feeling of infiniteness that we crave, that we believe in, and sometimes, though rarely, find in human friendship. The deepest love leads us through and beyond itself into the Infinite Heart, whose calm throbbing steadies us with the permanence and peace of eternity.—Lucy Larcom.

Pleasures of the mind are more at command than those of the body. A man may think of a handsome performance or of a notion that pleases him, at his leisure. This entertainment is ready, with little warning or expense; a short recollection brings it upon the stage, brightens the idea and makes it shine as much as when it was first stamped upon the memory.—Jeremy Collier.

Fashion Notes.

Toques are the head covering most in vogue just now. The feature of the present-day toque is, first, its breadth, and secondly, the high effect on the left side, together with the abruptly turned-up side.

One toque is of royal purple velvet, with a beret effect on the right side, the left being gathered up in a bunch. Two tips are placed where the folds are tied in the center, and another below the edge of the toque, resting on the hair. An altogether different, but equally chic, toque is an intensely vivid green mirror velvet, gathered over a small rim, and then bunched up high on top, the velvet being then turned over the left side in two folds, between which shirred satin is drawn under the brim and finished with a Strauss buckle, holding a pink rose, which rests on the hair. Just back of the fullness of the crown is a large bunch of cock feathers.

Another style of toque, which is worn tilted over the forehead nearly to the eyebrows, has the velvet gathered over a small brim, and is then caught loosely backward and forward, higher and higher, until the whole hat consists of a loose arrangement of folds and gathers, a large aigrette of stiff feathers on the left side, which, like the others, is turned up, giving character to the mass of puckered velvet.

In Paris among the new color combinations in plaids are seen fine lines of dark shades appearing on lighter grounds. Gray is seen on backgrounds of light blue, white, pale pink and heliotrope. A novel plaid showed threads of dark blue in combination with bright green, red, white and clear yellow.

In silks moires will be in great

demand for the coming season. Light-weight silks will be much worn, and the range of color and variety of design make it easy for one to select a charming gown.

Dress goods showing braided effects are exceedingly popular. On colored grounds the designs are black, in wavy and zigzag soutache effects. The material is an all-wool satin finish. The favorite grounds are brown, green, heliotrope, blue and red.

Flannel petticoats are trimmed with flounces of white wash silk edged with lace.

Beautiful toilet sets, consisting of tray, brush, comb and mirror, powder-box and hair-pin receiver, are of delicate china, decorated in dainty and picturesque design. They are newer than the silver-backed sets, and are thought by many to be far prettier.

A new material, which is most serviceable for petticoats, is silk moreen. This comes in all colors, and can be had to match any gown. The petticoats are especially pretty made up with silk ruffles. As there is no question of the better wearing qualities of the moreen over taffetas, the former will be far prettier.

It is announced that gingham is to occupy an important position in the line of spring cotton goods. Small plaids will be a favorite design.

Blue is to be the leading color in the spring. Sky and navy blue, procelain, flax, greyish and lavender blues are all represented, both in millinery and dress goods. Lavender blue made its appearance this winter and a few elegant toilettes of this shade were worn by exclusive women. For flowers and other millinery trimmings turquoise blue will be given special prominence.

A novelty in veiling is black spotted net lined with white net, slightly tinted with pink, which makes it very becoming.

Belts of all kinds and conditions are worn, but one of the prettiest fancies is the belt of finely tucked black satin or colored velvet.

A very stylish finish for a cloth costume is one band of fur broadtail around the bottom, and a collar band covered with the fur. Velvet and lace complete your decoration, but no more fur.

The latest shape of fur capes is extremely short, reaching scarcely to the elbow. Cloth and velvet capes are also made of this length, and are frequently fashioned of three graduated flounces. A favorite trimming is a band of crosscut velvet or cloth, stitched down in the center. The velvet when put on in bands is usually a deeper shade of the same color as the cape.

Pleasantries.

Said the married man, who likes to be sympathized with: "My wife is never happy unless she has a grievance." "How happy she must be!" said the pretty girl; and then the married man grew strangely silent.—Cincinnati Enquirer.

"Have you noticed that New York's select circle has been cut down from 400 to 75?" asked the returned Chicagoan. Of course it had been noticed. "Well, if you ever go to New York," went on the Chicagoan, "you can't fail to notice that the smaller the circle of the very select may be the greater the number of people you will meet who belong to it."—Chicago Post.

Mamma: I'm afraid that young Wilder will not make you a good husband, Clara. Clara: Why not, mamma? Mamma: It seems to me that he rather neglects his personal appearance. Clara: Yes, that's true, mamma, and I'm glad you mentioned it. I'll see that he makes his personal appearance here every evening after this instead of only twice a week.—Chicago News.

It is not unusual for the Duke of Westminster's charity bill to amount to \$100,000 a year.

On July 6 the earth is farther away from the sun than at any other time.

DOMESTIC ECONOMY.

Domestic Hints.

BARLEY CRYSTAL MUFFINS.—Mix together one pint of entire wheat flour and one cupful of barley crystals, one-half of a teaspoonful of salt and one teaspoonful of sugar. Beat two eggs, add one cupful of milk and stir into the dry mixture. Add more milk, if needed, to mix to a thick drop batter, also two tablespoonfuls of melted butter, and beat until smooth. Stir in quickly two teaspoonfuls of baking powder, and fill greased gem pans two-thirds full. Bake twenty-five minutes in a quick oven and serve hot.

PHILADELPHIA PUFFS.—As they should be eaten as soon as baked, the other courses of the meal must be planned accordingly. Stir two cups of sifted flour into one cup of milk until free from lumps, and strain if there is any doubt about it. Beat two eggs, whites and yolks separately, until very light. Add the yolks and a saltspoon of salt to the flour and milk and beat again. When very light, fold the whites in carefully so as not to break the air cells. Fill heated moulds or gem pans half full of the batter and bake in a quick oven. If all these conditions are fulfilled, they will at once begin to rise and live up to their name. Serve as soon as done, and serve with foamy sauce.

HAM SALAD.—For ham salad, cold-boiled or baked, smoked ham is the best, although unsmoked may be used. Mix together and put into a fine dredger a small quantity each of celery, salt, cayenne and black pepper, white sugar and allspice. Shave the lean of the ham and squeeze lemon juice over the pieces, then lightly dredge them with the above mixture. Shave up some white onions and celery and put them in the salad bowl with a few white lettuce hearts. Add the ham next, then pour several spoonfuls of oil over all and a dash of vinegar. Serve quickly. In the country where oil is not procurable, the gravy from the fried fat of the ham may be used while it is warm enough to pour.

Hints to Housekeepers.

If you use a water cooler in summer you can cool your lemonade in it by putting the beverage in a bottle and setting it inside.

Absorbent gauze and paper muslin make good soft dish towels. Inexpensive bath mats of Turkish toweling can be found as low as thirty-five cents.

Old gloves protect the hands in doing the daily work of the house, but rubber gloves cannot be specially recommended, as they make the hands sensitive.

A proper towel folded several times, and dipped in hot water, quickly wrung and applied over the site of toothache or neuralgia, will generally afford prompt relief.

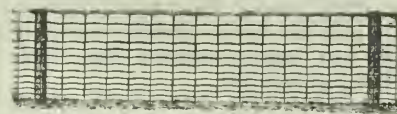
Sponge faded silks with warm water and soap; then rub them with a dry cloth on a flat board; afterward iron them on the inside with a smooth iron. Old black silks may be improved by sponging with spirits. In this case, the ironing may be done on the right side, thin paper being spread over to prevent glazing.

Challies can be beautifully washed in rice water. Boil half a pound of rice in rather more than two quarts of water. Let the water become tepid and then wash the fabric in it, rubbing it with the rice as if it were soap; rinse two or three times in rice water, from which, however, the rice has been removed, and use the last rinsing water well diluted, so that the material may not become to stiff. Iron while slightly damp.

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the material in a 75-cent jack-knife for five cents or less, and make your own knife—but you don't. Think about it when some one asks you to buy a machine and wire to make your own fence "cheap."

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NEURALGIA BY



Leah or Rachel?

(Continued from page 136.)

knew all about it without hearing, and best contented to sit quietly holding his hand and gazing at the fire with that thoughtful gaze which he had once conceived to cover so much.

A dozen times of an evening she said, "We miss Leah so!" and indeed they did. They were like two children alone, and the house seemed strangely vague and empty without her vivid, vivifying presence.

In a month the came back, rosy, smiling, full of good cheer, with perhaps a touch of added eloquence from the influence of life in a large town. Anti-slavery was the topic of the day. She had been at a couple of big meetings and conventions and had heard Abby Kelly speak. She entertained them all that evening with her graphic recitals. "And I can speak like Abby Kelly, too," she said, and then gave them an almost perfect reproduction of that once so famous lecturer's speech and style; "but," more diffidently and flushing a little, "I can speak like myself, too."

"And that will be the better of the two," said loving Rachel.

"I thought of a few things on the way home that I wanted to say, things that need saying," said Leah; and, rising, she delivered to them, as from a platform, a passionate and eloquent address. It was brief, and she sank into her chair laughing.

"There! did you think I could do it?" she said.

Rachel was full of fond pride. "You ought to lecture," she said. "It was ten times better than Abby Kelly."

"Than my imitation of her, you mean," said Leah. "Well, I should like to try. It would give me a life-work to do."

John Reiver said nothing. This talk of life-work and lecturing seemed to set him very far outside of Leah's interests, indeed, and made him feel very lonely and deserted.

When Rachel left the room for something, later on, Leah came to him, smiling, and said:

"I want to set your mind at rest, John, about the folly that caused my going away. I think it was more a sick fancy and being cooped up here, where I could neither hear or see anything of the world's work, than anything else. When I got out among broader interests and more stirring themes it seemed to vanish entirely."

Poor John! He felt as if his mother had denied him.

"You don't understand," he said, sadly. "I cared as much as you did."

"Of course," she answered, cheerfully, "we have always been fond of each other and always will be as brother and sister."

Then his homesick heart broke bounds.

"No, no!" he said. "Not that! not that! It's you I love. Rachel's not—"

She rose and put an authoritative hand on his shoulder.

"Don't say anything to Rachel's sister that will make our future meetings impossible," she said, sternly. "Why, how is this? I thought you a rock of steadfastness,—the strongest and best of men—and I find you unstable and as weak as water."

"No," he answered, miserably. "I'm steadfast enough. It was you from the first, only I was a fool."

The matter was never mentioned between them again. Leah thought best to be little at home for a while. She went to Boston and made the acquaintance of Wendell Phillips and other leading spirits of the movement that

soon absorbed her whole time and thought. She lectured with Abby Kelly and alone, at grove meetings and conventions, and she was loved, admired and respected as falls to the lot of few women to be. She devoted her life to the abolition of slavery, and, after it and the enfranchisement of the negro were accomplished, to the bettering of his condition, and to the help of the helpless and the succor of the fallen.

Many a time, in the years that followed, John Reiver lay waking, when the rain was on the roof, and his gentle partner slept placidly beside him, sick with loneliness, the daunted loneliness of a man who finds himself the only mature intelligence in a household of children, and his heart cried out for the stay and guide and companion of which chance and his boyish fancy had deprived it,—for Leah.

A dull man, most people called him; a slow, plodding, useful kind of fellow; a good husband and fond father, who filled his humble sphere well and had neither ambition nor ability for a higher or more stimulating life; but I shall always believe that John Reiver the husband of Rachel was very unlike what John Reiver the husband of Leah might have been. With his massive grasp and ponderous persistence of intellect, stimulated and supplemented by her fervor and quickness of perception, it seems to me there is scarcely a height he might not have scaled.

Dear heart! She has been dead these twenty years. She never married, but she lived a fuller and more rounded life than many a matron, and the blessings of the friendless followed her "beneath the low green tent whose curtain never outward swings."—Grace MacGowan Cooke.

The Cause of Dyspepsia.

From the Republican, Scranton, Penna.

The most common of all human ailments is deranged digestion; the most aggravating disease, inherited by man, dyspepsia.

The primary cause of dyspepsia is lack of vitality; the absence of nerve force; the loss of the life-sustaining elements of the blood.

No organ can properly perform its function when the source of nutriment fails. When the stomach is robbed of the nourishment demanded by nature, assimilation ceases, unnatural gases are generated; the entire system responds to the discord.

A practical illustration of the symptoms and torture of dyspepsia is furnished by the case of Joseph T. Vandyke, 440 Hickory St., Scranton, Pa.

In telling his story, Mr. Vandyke says: "Five years ago I was afflicted with a trouble of the stomach, which was very aggravating. I had no appetite, could not enjoy myself at any time, and especially was the trouble severe when I awoke in the morning. I did not know what the ailment was, but it became steadily worse and I was in constant misery."

"I called in my family physician, and he diagnosed the case as catarrh of the stomach. He prescribed for me and I had his prescription filled. I took nearly all of the medicine, but still the trouble became worse, and I felt that my condition was hopeless. I tried several remedies recommended by my friends but without benefit. After I had been suffering several months, Thomas Campbell, also a resident of this city, urged me to try Dr. Williams' Pink Pills for Pale People."

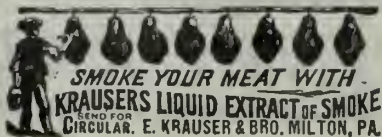
"He finally persuaded me to buy a box and I began to use the pills according to directions. Before I had taken the second box I began to feel relieved, and after taking a few more boxes I considered myself restored to health. The pills gave me new life, strength, ambition and happiness."

Dr. Williams' Pink Pills cure dyspepsia by restoring to the blood the requisite constituents of life, by renewing the nerve force and enabling the stomach to promptly and properly assimilate the food. These pills are a specific for all diseases having their origination in impoverished blood or disordered nerves. They contain every element requisite to general nutrition, to restore strength to the weak, good health to the ailing.

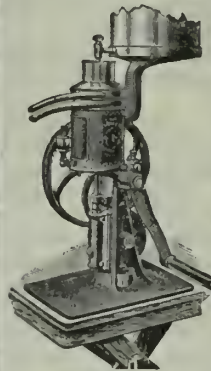
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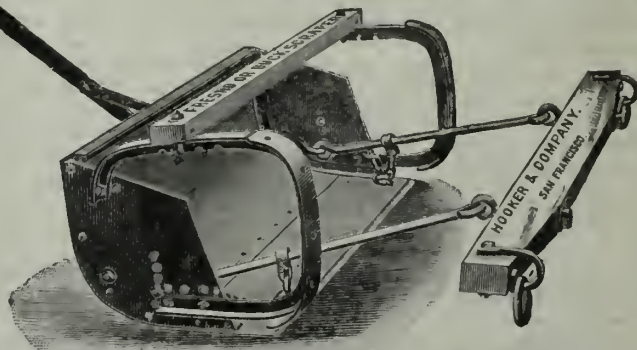
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Beware of Ointments for Catarrh That Contain Mercury.

As mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is tenfold to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally, and made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free.

Sold by druggists, price 75c. per bottle. Hall's Family Pills are the best.

Curious Facts.

The largest telegraph office in the world is in the General Postoffice building, London. There are over 3000 operators.

The force of gravity at the sun's surface is twenty-seven times greater than the force of gravity on the earth. An average-sized person would weigh a ton on the sun's surface. The average density of the sun is only a quarter of that of the earth.

The sun's distance is equal to about two thousand times the diameter of the earth. A train running at sixty-five miles an hour would reach the sun in 175 years. At the rate of two cents a mile the fare to the sun would be about \$1,500,000.

The English have adopted a new fad in the shape of perfumed butter. The butter is of extra fine quality and wrapped in muslin. It is then placed upon a bed of rose leaves and the whole put in a refrigerator, where it is allowed to remain for ten or twelve hours, during which time it becomes perfumed.

The Chinese are said to possess secrets in the preparation of sweets that astonish our most accomplished confectioners. They know how to remove the pulp from oranges and substitute various jellies. The closest examination fails to reveal any opening or incision in the skin of the fruit. They perform the same feat with eggs.

Bears sleep for months during the dead of winter. Fattening in the fall, they creep to some cave or hollow tree, and pass there into a state of hibernation, which reduces them, physiologically speaking, to the condition of cold-blooded animals. The vital activities of their bodies are reduced to a minimum, and yet they appear in the spring lean and exhausted by this long fast.

In Washington, D. C., recently, the underground trolley was put to a severe test. Water entered the conduit and nearly a block in length of it was completely flooded. The cars, however, operated without any trouble. Washington and New York will soon have many hundred miles of trolley conduits in operation—already a large length of such road is working,—so that the above test is very important and reassuring.

SUFFERERS FROM COUGHS, SORE THROAT, etc., should be constantly supplied with "Brown's Bronchial Troches." Avoid imitations.

BUY NORTHERN GROWN SEEDS

FARM SEEDS

Salzer's Seeds are Warranted to Produce.

E. Walter, Leffersville, Pa., astonished the world by growing 250 bushels Salzer's corn; J. Kreider, Mishicot, Wis., 173 bush. barley, and P. Munot, Randallia, Iowa, by growing 196 bush. Salzer's oats per acre. If you doubt, write them. We wish to gain 150,000 new customers, hence will send on trial

10 DOLLARS WORTH FOR 10c.

11 pkgs. of rare farm seeds, Hog Pea, Sand Vetch, 40c. Wheat, Sheep Rape, Jerusalem Corn, etc., including our mammoth Seed Catalogue, telling all about the \$100 gold prizes for best name for our new marvelous corn and oats, "Prodigies," also sample of same, all mailed you upon receipt of but 10c. postage, positively worth \$10, to get a start, 100,000 bbls. Seed Potatoes at \$1.50 a bbl. 33 pkgs. earliest vegetable seeds, \$1.00.

Please send this adv. along.

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Catalogue alone, 5c. No. 27

Seeds, Plants, Etc.

For Planting Season of 1898

We offer for sale a choice lot of

Budded Orange and Lemon Trees,

One and two-year buds of the leading varieties, on sour or sweet stock.

Prices to suit the Times.

SEEDLING ORANGE TREES at your own price.

Correspondence solicited.

Oroville Citrus Association,
Oroville, Butte Co., Cal.

Established 1876.



MYROBOLAN NURSERY.

NO IRRIGATION.

Offers for the Season of 1897-8
a Complete Assortment of

CLEAN, HEALTHY, NON-IRRIGATED **Fruit Trees.**

Correspondence Solicited.

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For the Season 1897-1898.

J. T. BOGUE,
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MARYSVILLE, CALIFORNIA.

ALL KINDS OF

Fruit and Ornamental Trees.

PHILIPS' CLING PEACH TREES.

ASK FOR PRICES.

ESTABLISHED IN 1868.

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Nursery,

WATSONVILLE, CALIFORNIA.

30 YEARS UNDER THE SAME MANAGEMENT.

Is where you can get all kinds of
NON-IRRIGATED
FRUIT TREES,

Soft-Shell Walnut Trees, Small Fruits, Etc.
AT THE VERY LOWEST PRICES.

Introducer of the **Lozan Berry**. The genuine plants can be had by the 100 or 1000.
JAMES WATERS, Proprietor. Send for Prices.

In buying seeds "economy is extravagance," because the cost of cultivation wasted or inferior seeds always largely exceeds the original cost of the best and dearest seeds to be had. The best is always the cheapest. Pay a trifle more for

FERRY'S SEEDS

and always get your money's worth. Five cents per paper everywhere. Always the best. Seed Annual free. D. M. FERRY & CO., Detroit, Mich.

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is one of the three important ingredients of a complete fertilizer; the others are phosphoric acid and nitrogen. Too little Potash is sure to result in a partial crop failure.

Free

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The only DISC HARROW on the market that can be reversed without removing a bolt or taking apart. Reversed by simply operating a lever.

Can be used with extension arms, which can be adjusted to leave a space of 4 to 6 feet between the gangs, enabling the driver to cultivate near the trees or vines without injury, as the levers can be locked parallel with the frame, thereby leaving no obstruction.

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Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced first-class agency. We have able and trustworthy associates and agents in Washington and the capital cities of the principal nations of the world. In connection with our scientific and Patent Law Library, and record of original cases in our office, we have other advantages far beyond those which can be offered home inventors by other agencies. The information accumulated through long and careful practice before the Office, and the frequent examination of patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us to give advice which will save inventors the expense of applying for patents upon inventions which are not new. Circulars and advice sent free on receipt of postage. Address DEWEY, STRONG & CO., Patent Agents, 330 Market St., San Francisco, Cal.



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Is constructed especially for the purpose intended. Has great strength, is simple in construction. Nothing to get out of order. Is arranged to be set on the top of an ordinary harrow. With the large air chamber you throw a very fine and regular spray. It is operated very easily and is not laborious to the party pumping. The valves are very accessible. In fact, there is no cheaper or better pump. Send for special Catalogue and Prices, Mailed Free. We carry a full line of all kinds of SPRAY NOZZLES, HOSE, ETC.

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OR "BLUE RIBBON"
BRAND
SMOKELESS

HAZARD
LEADS THE WORLD.

HAZARD POWDER.

It is Quick,
Clean, Strong
And Reliable.

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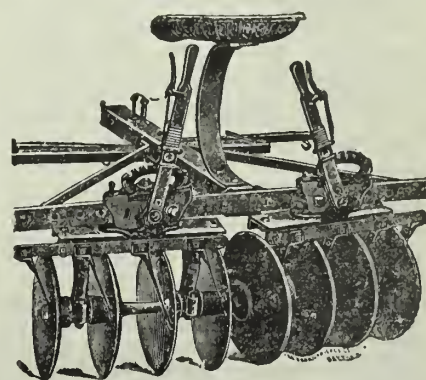
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Pacific Reversible Disc Harrow.

4-foot, 5-foot and 6-foot sizes in 16 or 20-inch discs. We guarantee that this Harrow can be more quickly reversed than any machine in the market.

Our prices are a revelation. An extension can be furnished admitting of a space of between 5 and 6 feet between gangs. A center-cut device can be furnished, if desired.

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And make no failures. Positively the LATEST and BEST. Many kinds and sizes. WRITE US WHAT YOU REQUIRE.

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LIGHTNING WELL MACH'Y
PUMPS, AIR LIFTS,
GASOLINE ENGINES
THE AMERICAN WELL WORKS,
AURORA ILL.-CHICAGO.-DALLAS, TEX.

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THE LEADING GROWERS IN THE STATE OF

Deciduous Fruit, Olives,
Citrus, Ornamental Trees

and Grape Vines.

NEW FRUITS: Imperial and Giant Prune, Wickson Plum, Triumph Peach, Winter Bartlett Pear. A well selected and complete assortment of Palms, Roses and Green-house Plants.

SEND FOR PRICE LIST AND NEW DESCRIPTIVE CATALOGUE. WE OFFER MANY NEW AND VALUABLE NOVELTIES.

Special Quotations on Carload Lots.

GEO. C. ROEDING, Proprietor.

Electrical Storms in California.

The electric storms of California are not local to any one portion of the State over another; thunderstorms are observed as occurring on the same day over 800 miles apart, viz: at Pichacho, San Diego county, in the southeastern portion of the State, and Yreka, Siskiyou county, in the northern portion of the State.

During the thunderstorms of August 10, 1896, electric displays were observed in Siskiyou, Modoc, Lassen, Tehama, Sonoma, Alameda, Santa Clara, Mono, San Bernardino and San Diego counties. Siskiyou and San Diego counties are nearly 800 miles apart.

The greater number of thunderstorms in June, July and August are confined to the counties of the Coast Range and the Sierra Nevada range of mountains. Daily during these months the tops of cumulo-stratus and cumulonimbus clouds may be observed over the Sierra Nevada range of mountains, especially in the northeastern and eastern portions of the horizon.

The greater number of these storms are noted in July and August, during and at the close of a hot spell in the Sacramento and San Joaquin valleys. As the hot and moist-laden air rises it strikes the upper southwesterly current of air and is wafted over the Sierra Nevada mountains, where the moisture is rapidly condensed, forming these thunder-head clouds. It is among such clouds as these that so much sheet lightning is observed and reported by observers in the foothill and valley towns.

Herewith is a record of all electric storms reported by the voluntary observers throughout the State from September, 1891, to October, 1897, inclusive:

Total number of thunderstorms recorded as having occurred in the State of California from September, 1891, to October, 1897:

| YEAR. | 1891. | 1892. | 1893. | 1894. | 1895. | 1896. | 1897. | Total. | Monthly averages. |
|----------------|-------|-------|-------|-------|-------|-------|-------|--------|-------------------|
| January..... | 0 | 1 | 6 | 5 | 7 | 6 | 25 | 4 | 4 |
| February..... | 2 | 0 | 0 | 1 | 4 | 8 | 15 | 5 | 5 |
| March..... | 0 | 4 | 2 | 3 | 3 | 7 | 28 | 6 | 6 |
| April..... | 3 | 2 | 4 | 5 | 9 | 5 | 28 | 6 | 6 |
| May..... | 4 | 7 | 6 | 4 | 13 | 10 | 44 | 7 | 7 |
| June..... | 6 | 0 | 9 | 5 | 11 | 15 | 46 | 8 | 8 |
| July..... | 8 | 8 | 12 | 3 | 25 | 4 | 60 | 10 | 10 |
| August..... | 2 | 8 | 0 | 15 | 6 | 18 | 57 | 10 | 10 |
| September..... | 2 | 8 | 6 | 2 | 7 | 12 | 51 | 7 | 7 |
| October..... | 1 | 0 | 0 | 1 | 10 | 4 | 30 | 4 | 4 |
| November..... | 0 | 7 | 3 | 1 | 0 | 0 | 11 | 2 | 2 |
| December..... | 2 | 1 | 6 | 4 | 3 | 1 | 17 | 3 | 3 |
| Total..... | 53 | 59 | 37 | 62 | 52 | 107 | 413 | 68 | 68 |

NOTE.—Total and average for September and October are for seven years. *For four months. †For ten months.

The greater number of these storms are reported as occurring during the months of May, June, July, August and September; the hotter the weather in summer the greater are the number of such storms observed and reported. The records of 1896 and 1897 show a greater number recorded. Possibly this is due partly to an increased number of observers and to more accurate records of those storms than during previous years, when a much smaller number was reported.

During cool summers there are much fewer electrical displays than during hot summers with long-continued spells of excessive heat. No doubt, if our summers in California were as wet and stormy as in the States east of the Rocky mountains, our record of magnificent electric displays would be equal to those of the East.

To BUILD a sewer inside of a sewer in Worcester, Mass., a coffer dam was constructed and the materials delivered to the workmen in electric scows, which worked to perfection, it is said. The sewer in that city is a large one, 18 feet wide and 13 feet high, which carried off both storm water and sewage. As it was desirable to separate the two, a smaller sewer 6 feet wide was built inside the larger one, utilizing the bottom and one side of it for the walls. A double trolley system was used in the work, the wires being hung from insulated brackets in the arch in such a way that a trolley could be run on each, two wires being necessary, one for the return current. There were six electrically propelled boats run to and fro, and

they readily handled 12,000 bricks, fifty barrels of cement and 100 barrels of sand daily. Electric lights supplied the necessary illumination; electric fans provided the ventilation, and electric pumps aided largely in the rapid construction.

All canned goods should be opened several hours, if possible, before they are used. This gives them a chance to become aerated, and takes away the rather flat taste they are apt to have. This is especially true of tomatoes. Careful housekeepers do not allow vegetables and fruits to stand during this process in the tins in which they are put up, but have them turned out immediately into a glass or earthen dish.

If the inhabitants of the fixed stars had powerful enough telescopes to see us, they would not see us as we are today, but as we were fifty, one hundred years, or even longer ago, for it would take light that long to travel to them.

The average life of women in France during the last thirty-two years has been thirty-eight years, and of men thirty-six years.

Any guarantee

you want—even this we will do:

We will pay \$100 reward for any case of colic, horse ail, curbs, splints, knotted cords, or similar trouble, that



Tuttle's Elixir

will not cure. It is the veterinary wonder of the age, and every stable should have a bottle always on hand. Locates lameness when applied by remaining moist on the part affected.

Used and endorsed by the Adams Ex. Co.
Dr. S. A. TUTTLE.
Dear Sir:—I have used your Elixir on one of the worst spavins that I ever saw on a horse, and it entirely cured the lameness. I also used it for rheumatism in my family, with just as good a result, and will cheerfully recommend it to any one in want of a liniment.

Tuttle's Family Elixir cures Rheumatism, Sprains, Bruises, Pains, etc. Samples of either Elixir free for three 2-cent stamps for postage. Fifty cents buys either Elixir of any druggist, or it will be sent direct on receipt of price. Particulars free.

DR. S. A. TUTTLE, Sole Proprietor,
27 Beverly Street, Boston, Mass.

Quinn's Ointment



is a boon to suffering horse flesh and yields of profit to man. It cures all diseases of the legs and feet, making lame horses sound, thus converting loss into profit.

All Druggists Sell It.....

If by chance you should not find it there we'll mail you package for \$1.50. Smaller size 50 cents.

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Surveying, Architecture, Drawing and Assaying.
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Assaying of Ores, \$25; Bullion and Chlorination Assay, \$25; Blowpipe Assay, \$10. Full course of assaying, \$50. Established 1864. Send for Circular.



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NEW AND SECOND-HAND
FROM \$20 UP

Send for List. Hooker & Co., San Francisco

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Send for Pamphlet, "The Saw, How to Choose It, and How to Keep It in Order," Mailed Free.

IT WILL PAY YOU to buy a saw with Disston's name on it. It will hold the set longer and do more work without filing than other saws, thereby saving in labor and cost of files. They are made of the best crucible cast steel and fully warranted.

FOR SALE BY ALL DEALERS.

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Always in the Lead!

In the face of the strongest competition ever known at a California State Fair our swine herd again carried off the majority of the premiums. Why? Because we have the best pigs in the State. Choice pigs from prize winners ready to ship at reasonable prices. Write for Catalogue and Prices.

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Six lines or less in this directory at 50c per line per month.

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F. H. BURKE, 626 Market St., S. F. Holsteins, winners for three years of State Fair butter contests; Jerseys and Durhams competing. New Catalogues. Registered Berkshires.

JERSEYS, HOLSTEINS & DURHAMS. Best Butter and Milk Stock. Thoroughbred Hogs and Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETERSAXE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

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MRS. J. G. FREDERICKS, Madison, Cal. Fresh Eggs in small or large lots at reasonable prices from choice Brown and Buff Leghorns, Black and White Minorcas.

SACRAMENTO POULTRY SUPPLY CO., 1025 J St., Sac to. (Successor to Townsend & Co.) Manufacturers and dealers in Poultry Supplies. Coast agents Monitor Incubator (highest award World's Fair). Thoroughbred Poultry and Eggs. Catalogue free.

W. H. YOUNG, Stockton, Cal. All varieties of Poultry, and Belgian Hares. Prices on application.

SANTA TERESA POULTRY FARM, Eden Vale, Cal. Barred Plymouth Rocks, Black Minorcas, White Leghorns, Brown Leghorns. Fine Stock and Eggs for sale. Send for circular.

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WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

MANHATTAN EGG FOOD, Red Ball Brand, at all grocers; or wholesale, Tillman & Bendel, S. F.

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ELIAS GALLUP, Breeder of Poland China Hogs, Hanford, Kings Co., Cal.

BERKSHIRE AND POLAND-CHINA HOGS, Best Stock; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

J. P. ASHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Swine.

Sheep and Goats.

J. B. HOYT, Bird's Landing, Cal. Importer and Breeder of Shropshire Sheep; also breeds Cross-bred Merino and Shropshire Sheep. Rams for sale. Prices to suit the times. Correspondence solicited.

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MISS DELLA BEACH, San Jose, Cal. Breeder of Reg'd Thoroughbred Scotch Collie Shepherd Dogs.

RANCHO BENITO KENNELS. Thor'd Scotch Collies. Pups for sale. At stud, Imp. Ormskirk Bluebird; fee \$25. Stewart & Son, Aransas, Cal.

Improved Pacific Incubator.

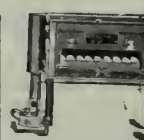


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And up—Best Incubator made. More practical progressive features than any other.

Indisputable evidence that our system is the correct one. Catalogue free. We Pay Freight. PETALUMA INCUBATOR CO., Petaluma, Cal.

THE SUCCESSFUL INCUBATOR

Is the standard machine for hatching strong, healthy chicks. Self-regulating, patent turning trays, drying room for chicks, non-explosive lamp—just a few of its good points. Sold under positive guarantee to work perfectly. Beautifully made and durable. Our 128 page catalogue describes them fully; tells many things about poultry raising you should know. Mailed for 6 cts.

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THE WHOLE STORY

of successful incubating and brooding chicks is told in our new 228 page catalogue. Full description of the best machines to use for the purpose. Cuts and instructions for building modern, economical poultry houses; poultry supplies and cuts and prices on leading varieties of pedigree poultry; prices on eggs for hatching, etc. Full of valuable information to the man or woman who keeps hens. We send it to any address on receipt of 10 cents.

RELIABLE INCUBATOR & BROODER CO., Quincy, Ill.

THE IMPROVED VICTOR INCUBATOR



Hatches Chickens by Steam

Absolutely self-regulating.

The simplest, most reliable, and cheapest first-class hatcher in the market. Circulars free.

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MONEY IN HONEY!



The Weekly

American Bee Journal

Tells all about it.

Sample Copy Mailed Free

G. W. YORK & CO.,

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DO YOU SUFFER?

WE CAN HELP YOU.

Write to Us in Confidence and if We Cannot Help You We Will Say So.

Ten Years' Experience Has Proven to Us That We Have the

GREATEST MEDICINE IN THE WORLD.

The Only Remedy Endorsed by the Supreme Court of New York, etc., etc.

Write or Call for Pamphlet, "Disease: Its Cause and Cure," Free on Application.

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"ACME" PULVERIZING HARROW, CRUSHER & LEVELER

For all soils, all work. Crushes, cuts, lifts, pulverizes, turns, levels the soil in one operation.

Cast steel and wrought iron—practically indestructible. Cheapest riding harrow on earth. \$8.00 and up.

If the agent in your section has not called on you, or if there is no agent there, communicate direct with me. Note that I deliver on cars in SAN FRANCISCO and CHICAGO.

Illustration pamphlet mailed free. Mention this paper. DUANE H. NASH, Sole M'r., (Millington, New Jersey, and 30 So. Canal St., Chicago.

S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, February 23, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|----------------------|--------------------|
| Wednesday..... | \$ 99 3/4 @ 1 03 1/4 | \$ 86 1/2 @ 89 1/2 |
| Thursday..... | 1 03 1/4 @ 1 06 | 89 1/2 @ 91 1/4 |
| Friday..... | 1 02 1/2 @ 1 03 1/4 | 89 1/2 @ 91 1/4 |
| Saturday..... | 1 03 1/4 @ 1 08 | 89 1/2 @ 92 1/4 |
| Monday..... | 1 08 @ 1 06 | 93 1/4 @ 91 1/4 |
| Tuesday..... | @ — | @ — |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|------------|------------|
| Wednesday..... | 7s 6 1/2 d | 7s 2 1/4 d |
| Thursday..... | 7s 7 1/2 d | 7s 3 1/2 d |
| Friday..... | 7s 6 1/2 d | 7s 2 1/4 d |
| Saturday..... | 7s 6 1/2 d | 7s 3 d |
| Monday..... | 7s 7 1/2 d | 7s 4 d |
| Tuesday..... | @ — | @ — |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|---------------------|-----------------------|
| Thursday..... | \$1 41 1/4 @ 1 41 | \$1 33 1/4 @ 1 33 1/4 |
| Friday..... | 1 40 1/4 @ 1 41 | 1 33 1/4 @ 1 33 1/4 |
| Saturday..... | 1 41 1/4 @ 1 42 1/4 | 1 33 1/4 @ 1 34 |
| Monday..... | 1 43 1/4 @ 1 45 1/4 | 1 36 1/4 @ 1 35 |
| Tuesday..... | @ — | @ — |
| Wednesday..... | 1 43 @ 1 42 1/4 | 1 34 1/4 @ 1 32 1/4 |

Wheat.

To-day (Wednesday) market for spot wheat is easier in tone than for several days past, owing to indications for rain, but is not notably lower. Options declined. The market has shown more firmness than during preceding week, but at the same time no appreciable changes were established in spot values. Ocean freights show a decided decline, quotable rates having dropped 5 shillings, or \$1.25 per long ton, equivalent to 5c per cental. This has not been added to wheat, for the reason that wheat values and freights from here had been above the parity of foreign markets. Any improvement in European markets in the near future is more apt to work here to the benefit of wheat than to freights. Speculative markets have been all strong and higher, largely the result of manipulation in Chicago, where the advance was the greatest. Liverpool futures showed the least gain, with advances on San Francisco Call Board not much ahead of those on the English market. Aside from the Chicago manipulation, crop prospects in this State had a tendency to stiffen values for spot wheat in this center.

There have been some interesting developments the past week in the Chicago speculative market, where the bulls, supposed to be headed by the capitalist Leiter, made it intensely interesting for the shorts. May wheat touched \$1.08 per bushel and there were heavy transactions in the vicinity of \$1.07 1/2. July wheat was also tolerably high in Chicago, but in the upward movement did not keep pace with May. Why July should have moved up as much as it did is rather remarkable, when it is considered that the sharp advances established on the Chicago board in May wheat were simply the result of a squeeze. The manipulators may be working July so as to get out a long line of shorts at the advanced figures, and later on, with May contracts out of the way, break the market so as to reap a harvest of coin by filling their July contracts at generally reduced figures from those now current. This is probable, although as to their exact intentions no one knows outside of the manipulators themselves, and even they may be in serious doubts as to the course to pursue. The daily press has been lately making some wild statements in connection with this deal. Chicago dispatches announced that Mr. Leiter denied he was unloading wheat, notwithstanding reports to the contrary, and that he did not propose to sell, except at from \$1.25 @ \$1.50 per bushel. A day or two later the public was informed through the same channels that Mr. Leiter had disposed of a large portion of his holdings to prominent millers in the United States and to European buyers, so as to keep the wheat off the Chicago board, and prevent it from being used as a club to break the market. The Leiter interest either did not sell the block of wheat above reported or did not receive \$1.25 a bushel, to say nothing of \$1.50, the higher figure mentioned, so it

is quite evident there has been misrepresentation. It is said some of the San Francisco shippers have been caught in this deal. It is not uncommon for them to sell on the speculative market against cargoes sent afloat, so if the market declines they are sure of a profit, and if the market advances they expect to make the losses on their contracts good by the appreciation in the value of the cargoes. At the present disparity of values between Chicago and Liverpool, shippers would come out heavy losers. There is another report that Leiter and Armour, instead of opposing each other on this deal, are secretly working together to cinch the public. Stranger things than this have happened, even in wheat deals.

California Milling.....\$1 45 @ 1 50
Cal. No. 1 shipping, alongside.....1 42 1/2 @ 1 45
Oregon Valley.....1 40 @ 1 43 1/4
Walla Walla Blue Stem.....1 42 1/2 @ 1 47 1/2
Walla Walla Club.....1 35 @ 1 42 1/2

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 white wheat per cental for the week were as follows for the options named:

May, 1898, delivery, \$1.40 1/2 @ 1.45.
December, 1898, delivery, \$1.36 1/2 @ 1.32 1/4.
Wednesday, at regular noon session of Call Board, May wheat sold at \$1.43 @ 1.42 1/4;
December, 1898, \$1.34 1/4 @ 1.32 1/4.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|---------------|-------------------|
| Liv. quotations..... | 6s 7d @ 6s 8d | 8s 2d @ 8s 3d |
| Freight rates..... | 15 @ 16 1/4 s | 24 1/4 @ 25 s |
| Local market..... | \$1.35 @ 1.40 | \$1.42 1/2 @ 1.45 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

On the basis of wheat values, Flour should be commanding better prices than are now current, but values for Flour have been kept lately at abnormally low levels through the very profitable figures realized for mill feed. Quotations for Flour are unchanged, but is among the probabilities of the near future that the market will be less favorable to buyers. Stocks now being carried in this center are of quite moderate proportions.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | \$3 00 @ 3 25 |
| Superfine, good to choice..... | 3 35 @ 3 60 |
| Country grades, extras..... | 4 00 @ 4 25 |
| Choice and extra choice..... | 4 25 @ 4 50 |
| Fancy brands, jobbing..... | 4 50 @ 4 65 |
| Oregon, Bakers' extra..... | 3 90 @ 4 25 |
| Walla Walla, Bakers' extra..... | 3 90 @ 4 25 |

Barley.

This market has ruled more in favor of sellers since last review than during previous week, despite the fact that in the meantime rain has fallen in a large portion of the State to the extent of a quarter to half an inch. Much of the barley is grown in the southern part of the State where rain is most needed and where very little fell the past week. Options sold at a considerably higher range than previous week, the improvement on Call Board being more pronounced than in quotable values for spot offerings. At the close (Wednesday) there was an easier tone to the spot market, and prices of options were on the decline, owing to indications of rain.

| | |
|---------------------------------|-----------------|
| Feed, No. 1 to choice..... | 1 05 @ 1 10 |
| Feed, fair to good..... | 1 02 1/2 @ 1 05 |
| Brewing, No. 1 to choice..... | 1 12 1/2 @ 1 20 |
| Chevalier, No. 1 to choice..... | @ — |
| Chevalier, No. 2..... | @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

May, 1898, delivery, 97 1/2 c @ \$1.00 1/2.
December, 1898, delivery, 94 1/2 c @ 92 1/2 c.
Wednesday at regular noon session of the Call Board May, 1898, feed sold at \$1.03 1/4 @ 1.02 1/2; Dec., 1898, 92 1/2 @ 93 c.

Oats.

No changes of great moment have taken place in either quotable values or the general tone of this market since last report. There are fairly liberal supplies of Oats now in store and warehouse here, but they are principally in few and strong hands, and are not being crowded to sale at the expense of making noteworthy concessions to buyers.

| | |
|-------------------------------|---------------------|
| White Oats, fancy feed..... | 1 25 @ 1 30 |
| White, good to choice..... | 1 17 1/2 @ 1 22 1/2 |
| White, poor to fair..... | 1 10 @ 1 12 1/2 |
| Gray, common to choice..... | 1 15 @ 1 20 |
| Milling..... | 1 17 1/2 @ 1 22 1/2 |
| Surprise, good to choice..... | 1 20 @ 1 27 1/2 |
| Black Russian..... | 1 20 @ 1 50 |
| Red..... | 1 10 @ 1 40 |

Corn.

There is a little easier tone than last

noted, due principally to further importations of Eastern. While arrivals of the latter are not heavy, they are sufficient to unfavorably affect the market for sellers. Most of the producers in this State are holding back supplies, not being willing to unload at present figures.

| | |
|----------------------------------|-----------------|
| Large White, good to choice..... | 1 05 @ 1 10 |
| Large Yellow..... | 1 07 1/2 @ 1 10 |
| Small Yellow..... | 1 12 1/2 @ 1 15 |
| Eastern Yellow..... | 1 05 @ 1 07 1/2 |
| Egyptian White..... | @ — |
| Popcorn, shelled, #1..... | @ — |

Rye.

Business in this cereal is light, but market is fully as favorable to the selling interest as previously reported.

| | |
|--------------------------|-----------------|
| Good to choice, new..... | 1 05 @ 1 07 1/2 |
|--------------------------|-----------------|

Buckwheat.

Market is firm at same range of values in force at date of previous review, with stocks very light, hot here and in the interior.

| | |
|---------------------|-------------|
| Good to choice..... | 1 75 @ 1 85 |
| Silverskin..... | @ — |

Beans.

The leading feature of the bean market since last review has been the sharp advance in Limas. Stocks of this variety are now understood to be tolerably well concentrated and are being stiffly held, the firmness being largely due to poor prospects for coming crop. Colored beans ruled quiet, only a few buyers taking hold in a small way at figures now asked. Market for white varieties inclined against buyers, some holders refusing to sell at current rates.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 50 @ 1 60 |
| Small White, good to choice..... | 1 50 @ 1 65 |
| Lady Washington..... | 1 45 @ 1 55 |
| Butter, small..... | 1 45 @ 1 55 |
| Butter, large..... | 1 60 @ 1 75 |
| Pinks..... | 2 60 @ 2 75 |
| Bayos, good to choice..... | 2 90 @ 3 00 |
| Reds..... | 2 00 @ 2 25 |
| Red Kidneys..... | 2 00 @ 2 25 |
| Limas, good to choice..... | 2 00 @ 2 25 |
| Black-eye Beans..... | 2 25 @ 2 50 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

The bean market on the Atlantic side is thus outlined by a New York authority, according to recent advices received by mail, prices quoted being per 60-lb. bushel:

The influence of recent large export business in Marrow beans has been felt this week, and, while trade has been quieter, sellers have asked and obtained an advance in the price; general sales of choice quality have been at \$1.35, but receivers are quite inclined to hold best marks at \$1.37 1/2. Country advices are quite firm, and stock is not coming forward at all freely, but the future of the market depends quite largely upon whether the export demand continues. Medium and Pea have worked upward 2 1/2 @ 5c, and there is a firm feeling at the close; best marks of the former cannot now be bought below \$1.15, and \$1.12 1/2 as low as holders will name on an equal grade of Pea. The movement in these beans is not large, but offerings are very moderate. Red Kidney have ruled quiet again this week, and rather an easy feeling has prevailed at times; shippers have taken a few hundred bbls. at \$1.67 1/2 @ 1.70 f. o. b., and some stock has gone elsewhere on the same basis, but the sales on the market to dealers has not exceeded \$1.65 and some good lots have sold for less. White Kidney not plenty and held a little stronger, though demand is light. Turtle Soup are scarce and buyers have had to pay about what holders asked for the few that were wanted. Yellow Eye dull and easy. Demand for Lima has not been large, but stock is offering with some reserve and values are firm; quotable at \$1.32 1/2 @ 1.35. Green peas still favor the seller.

Dried Peas.

Local millers have been bringing out Green Dried Peas from the East, and the market for home product in consequence presents an easier tone. Niles are ruling quiet at former values.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 80 @ 1 85 |
| Niles Peas..... | 1 40 @ 1 50 |

Hops.

There are no evidences of much doing in this center at this date, both the inward and outward movement being light. While quotable values remain steady, sales at full current figures are not readily effected from first hands. Dealers are slow to buy, unless in actual need, preferring to reduce rather than to increase stocks at prevailing rates.

| | |
|--------------------------------|---------|
| Good to choice, 1897 crop..... | 12 @ 16 |
|--------------------------------|---------|

Late advices by mail from New York furnish the following concerning the hop market:

The market holds firm, but trade has been quieter both here and in the interior. The lull in the demand, however, is only natural after some weeks of activity, and there is certainly nothing on the surface to indicate any change in the firm situation noted lately. Statistically the position is strong. Stocks are light at all primary points in this country, and it is very generally conceded that the crop of England fell a good deal short of the Government estimate. It seems probable that brewers have fair supplies on hand, and dealers here are carrying about their usual stocks. Everyone appears to feel that there is a stability to values, and that if further change occurs it will be toward a stiffening of rates, rather than any modification of present views. Much depends upon the needs of Great Britain. If the shortage there proves so great as to compel English buyers to keep buying from us, there will be no question about the course of values. More than half of the past week's receipts were for exportation direct, and some new purchases were made by shippers. Both cable and mail advices report a good movement in London, with the market showing increased strength.

Wool.

The same inactivity previously noted is still being experienced in the local wool market. Values are without quotable change, most holders showing no disposition to let go at less than full current figures. The indications

now are that large manufacturers and dealers are holding off the market, with a view of trying to depress values a little later on when spring wools of the 1898 clip will put in an appearance.

SPRING.

| | |
|-----------------------------------|---------|
| Oregon Valley..... | 17 @ 18 |
| Oregon Eastern, choice..... | 13 @ 15 |
| Oregon Eastern, fair to good..... | 10 @ 12 |

FALL.

| | |
|----------------------------|-----------|
| Middle County, free..... | 10 @ 13 |
| Do do defective..... | 9 @ 11 |
| Northern, free..... | 11 @ 14 |
| Do do defective..... | 10 @ 11 |
| Southern Mountain..... | 9 @ 12 |
| San Joaquin defective..... | 7 @ 8 1/2 |

Hay and Straw.

Slightly higher figures for Wheat, Oat and Barley Hay were established in this market immediately following last review. Stocks are light, which fact, in connection with dry weather in some of the largest Hay producing districts, enable holders of choice stable Hay to be exacting in the matter of prices. Cow Hay has not commanded an advance, being in quite fair receipt as compared with the demand. Liberal rains in the next week or two would cause an easier tone for all descriptions.

| | |
|--------------------|---------------|
| Wheat..... | 16 00 @ 19 00 |
| Wheat and Oat..... | 15 00 @ 18 00 |
| Oat..... | 15 00 @ 17 00 |
| Barley..... | 13 00 @ 16 00 |
| Clover..... | 11 00 @ 13 00 |
| Stock Hay..... | 10 00 @ 12 00 |
| Alfalfa..... | 10 00 @ 11 50 |
| Compressed..... | 15 00 @ 18 50 |
| Straw, # bale..... | 40 @ 50 |

Millstuffs.

Market for Bran and Middlings has been dropping to lower levels, owing to the large receipts from the North. Rolled Barley was higher than last quoted, in sympathy with the market for the whole article. Milled Corn sold at figures much the same as were current the preceding week.

| | |
|---------------------|---------------|
| Bran, # ton..... | 18 00 @ 19 00 |
| Middlings..... | 20 00 @ 23 00 |
| Barley, Rolled..... | 24 00 @ 24 50 |
| Cornmeal..... | 23 50 @ 24 00 |
| Cracked Corn..... | 24 00 @ 24 50 |

Seeds.

Market is practically bare of Mustard Seed, and for the time being only nominal quotations are possible. Flaxseed is in light supply and remains favorable to the selling interest. Alfalfa Seed was as cheap as previously quoted, few buyers putting in an appearance.

| | |
|----------------------------|-------------|
| Mustard, Yellow..... | 2 75 @ 3 00 |
| Mustard, Trieste Seed..... | 2 75 @ 3 00 |
| Mustard, Wild Brown..... | 2 00 @ 2 25 |
| Flax..... | 2 20 @ 2 25 |

Per cwt.

| | |
|--------------------|---------------|
| Canary..... | 2 1/2 @ 2 3/4 |
| Rape..... | 2 1/2 @ 2 3/4 |
| Hemp..... | 2 1/2 @ 2 3/4 |
| Alfalfa, Utah..... | 5 1/2 @ 6 1/4 |

Bags and Bagging.

There is little of interest to record in this market. Dealers in Calcutta grain bags are quoting unchanged figures, but it is very apparent that, if any noteworthy transfers were effected, lower prices than are nominally current would have to be accepted. Wool sacks are expected to be obtainable a little later on at slightly lower rates than were in force last season.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, buyer July..... | @ — |
| Calcutta Grain bags, 22x36, spot..... | 5 1/2 @ 5 3/4 |
| State Prison bags, per 100..... | 5 30 @ — |
| Wool sacks, 4 lb..... | 30 @ — |
| Wool sacks, 3 1/2 lb..... | 27 @ — |
| Gunnies..... | 10 @ — |
| Bean bags..... | 4 1/2 @ 4 3/4 |
| Fruit sacks, cotton..... | 5 1/2 @ 6 1/4 |

Hides, Pelts and Tallow.

The hide market is steady at the improved figures recently established. Pelts do not lack for custom at full current rates, the demand being fully equal to the supply. Tallow market is without quotable change, there being no pressure of offerings to sell, as receipts lately have been rather light.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|-------------|
| Heavy Steers, over 56 lbs..... | 10 1/2 @ 11 | 9 1/2 @ 10 |
| Medium Steers, 48 to 56 lbs..... | 9 1/2 @ — | 8 1/2 @ — |
| Light Steers, under 48 lbs..... | 9 @ 9 1/2 | 8 @ 8 1/2 |
| Heavy Cow Hides, over 50 lbs..... | 9 @ 9 1/2 | 8 @ 8 1/2 |
| Light Cow Hides, under 50 lbs..... | 9 @ 9 1/2 | 8 @ 8 1/2 |
| Wet Salted Veal..... | @ 10 | @ 9 |
| Wet Salted Veal..... | @ 11 | @ 10 |
| Wet Salted Calf..... | 17 @ 17 1/2 | 13 1/2 @ 14 |
| Dry Kip and Veal, 11 to 16 lbs..... | 14 @ 15 | @ 11 |
| Dry Calf, under 4 lbs..... | 18 @ 20 | 16 @ 17 |
| Horse Hides, large..... | 2 25 @ 2 75 | 2 00 @ 2 25 |
| Horse Hides, medium..... | 25 @ 30 | 25 @ 30 |
| Horse Hides, small..... | 25 @ 30 | 25 @ 30 |
| Colts' Hides..... | 25 @ 30 | 25 @ 30 |
| Pelts, long wool, per skin..... | 90 @ 1 30 | 70 @ 90 |
| Pelts, medium, per skin..... | 70 @ 90 | 40 @ 70 |
| Pelts, short wool, per skin..... | 20 @ 30 | 20 @ 30 |
| Pelts, shearling, per skin..... | 25 @ 30 | 25 @ 30 |
| Deer Skins, best summer..... | @ 20 | @ 10 |
| Deer Skins, good medium..... | @ 20 | @ 10 |
| Deer Skins, thin winter..... | 8 @ 10 | 3 @ 3 1/2 |
| Elk Hides..... | 2 @ 2 1/2 | 2 @ 2 1/2 |
| Tallow, good quality..... | 20 @ 37 1/2 | 20 @ 37 1/2 |
| Tallow, No. 2..... | 10 @ 20 | 10 @ 20 |
| Goat Skins, perfect..... | 10 @ 20 | 10 @ 20 |
| Goat Skins, damaged..... | 5 @ 10 | 5 @ 10 |
| Kid Skins..... | 5 @ 10 | 5 @ 10 |

Honey.

Choice to select qualities are being steadily held, with no heavy supplies of this description, and a moderate amount of business doing, mainly on local account. Extracted of fine quality is in lighter supply than comb. The dark amber grades are in poor request, either comb or extracted, and are salable only at a low range of values.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 4 1/2 @ 5 |
| Extracted, Light Amber..... | 3 1/2 @ 4 |
| Dark Tule..... | 1 1/2 @ 2 1/4 |
| White Comb, 1-lb frames..... | 8 @ 9 1/2 |
| Amber Comb..... | 4 @ 6 |

Beeswax.

Market is firm, with demand sufficient to absorb offerings as rapidly as presented for

sale. In a small way higher rates than are quoted are realized.

Fair to choice, lb. 24 @ 27

Live Stock and Meats.

Desirable qualities of Beef were not in large supply, and market was firm, but not notably higher. Mutton tended against buyers, and is likely to continue for at least a few months to come. Quotations show an improvement over figures last quoted. Hogs desirable for packing, large and hard, brought an advance on rates last named, with arrivals only moderate and demand good.

Beef, 1st quality, dressed, net lb. 6 @ 6 1/2
Beef, 2d quality, net lb. 5 1/2 @ 6
Beef, 3d quality, net lb. 4 @ 5
Mutton—ewes, 7 @ 7 1/2 c; wethers, 7 1/2 @ 8
Hogs, hard grain fed, medium, 4 1/2 @ 4 3/4
Hogs, small, 3 1/2 @ 3 3/4
Hogs, large hard, 4 1/2 @ 4 3/4
Hogs, young and feeders, 3 1/2 @ 3 3/4
Hogs, country dressed, 4 1/2 @ 5
Veal, small, lb. 6 @ 7 1/2
Veal, large, lb. 6 1/2 @ 7
Lamb, Yearling, lb. 8 @ 8 1/2
Lamb, Spring, lb. 12 1/2 @ 15

Poultry.

Dressed Turkeys were forwarded to this center freely the past week, shippers being evidently under the impression that there would be an extra demand on account of the anniversary of Washington's Birthday. But such was not the case. Retailers bought very sparingly, despite the fact that they were able to purchase at decidedly low figures. Choice young poultry continued in light receipt and was in good request at comparatively high prices. Old fowls were offered in sufficient quantity to give buyers the decided advantage. Arrivals of Eastern helped to keep market weak and dull for old stock of home production.

Turkeys, dressed, lb. 8 @ 11
Turkeys, live hens, lb. 8 @ 9
Turkeys, live gobblers, 8 @ 9
Hens, Cal., doz. 3 50 @ 4 50
Roosters, old, 3 50 @ 4 00
Roosters, young, (full-grown), 5 50 @ 6 00
Fryers, 5 00 @ 5 50
Broilers, large, 4 00 @ 5 50
Broilers, small, 4 00 @ 5 50
Ducks, young, doz. 6 50 @ 7 50
Ducks, old, 3 50 @ 4 50
Geese, pair, 1 25 @ 1 50
Goslings, pair, 2 50 @ 3 00
Pigeons, Old, doz. 1 00 @ 1 25
Pigeons Young, 1 50 @ 1 75

Butter.

Values have continued on the decline, due not only to increased receipts, but also to lower markets in the East. In order to secure shipping trade and relieve the market here of surplus, it was necessary to compete with Eastern dairy sections. Considerable Eastern butter has been lately landed on this coast, not only in this center, but at points north and south which ordinarily draw supplies from the San Francisco market.

Creamery extras, lb. 24 @ —
Creamery firsts, 23 @ —
Creamery seconds, 22 @ —
Dairy select, 22 @ —
Dairy seconds, 19 @ 21
Dairy, soft and weedy, — @ —
Mixed store, 15 @ 18
Creamery in tubs, 22 @ 24
Pickled roll, — @ —
Dairy in tubs, — @ —
Firkin, Cal., choice to select, 22 @ 23
Firkin, common to fair, 17 @ 20

Cheese.

Market is devoid of improvement, so far as values are concerned. Demand has been a little more active, the result of concessions on the part of sellers and the naming of easy prices to buyers. There is a general desire to prevent accumulations, believing that sales at current figures are more profitable than they would be at a cent or more advance later on for the same cheese, when shrinkage in weight and cost of carrying would more than have absorbed the difference.

California fancy flat, new, 9 1/2 @ 10
California, good to choice, 9 @ 9 1/2
California, fair to good, 7 1/2 @ 8
California Cheddar, 9 1/2 @ 10 1/2
California, "Young Americas", 9 @ 11

Eggs.

While there was no very pronounced change, the market recovered slightly from the extreme depression noted as existing at close of previous review. The low prices drew forth some shipping orders and also caused packing and storing to begin on local account. Store-gathered eggs were tolerably well cleaned up, and eggs direct from hennery or ranch which were obtainable at inside figures met with active demand. During the past few days asking prices have been advanced fully a cent, which caused buyers to take hold less freely.

California, select, large white and fresh, 12 1/2 @ 13
California, select, irreg. color and size, 11 1/2 @ 12
California, good to choice store, 11 @ 11 1/2
California, common to fair store, — @ —
Oregon, prime, — @ —
Held Eastern, as to section and grading, — @ —
Local Cold storage eggs, — @ —

Vegetables.

In the line of old vegetables Onions take the lead at present. These are in light supply, but are held too high to move freely. Jobbers and retailers are buying very sparingly, not only on account of the price, but the tendency of this vegetable to sprout and soften at this time of year discourages dealers from carrying. Early spring vegetables were in light receipt, were mostly from southern California, and included few strictly choice. Peas and Asparagus made the best showing. Desirable qualities brought good prices.

Asparagus, lb. 15 @ 25
Beans, String, lb. 8 @ 12 1/2
Beans, Lima, lb. — @ —
Beans, Refugee, lb. — @ —
Beans, Wax, lb. 70 @ 80
Cabbage, choice garden, 100 @ —
Cauliflower, doz. 60 @ 70
Corn, Green, sack, — @ —
Corn, Alameda, crate, — @ —
Cucumbers, hot house, doz. 50 @ 1 25
Egg Plant, lb. 12 1/2 @ 15
Garlic, lb. 2 @ 3 1/2

Mushrooms, Buttons, lb. 12 1/2 @ 15
Mushrooms, Wild, lb. 6 @ 10
Okra, Dried, lb. 12 1/2 @ 15
Onions, Yellow, good to choice, 2 60 @ 2 75
Onions, Yellow, cut, 1 75 @ 2 25
Peas, Sweet, Garden, lb. 7 @ 9
Peas, Los Angeles, lb. 4 @ 6
Peppers, Green Chile, lb. 20 @ 25
Rhubarb, box — @ —
Squash, Summer, lb. 6 @ 8
Tomatoes, box or crate, 75 @ 1 25

Potatoes.

The potato market continued in much the same groove as during preceding week. Common qualities of Burbank Seedlings were in rather heavy supply, and market for such inclined against sellers. Market for choice to select showed no weakness and is not likely to. Red potatoes were in poor request. Seed potatoes were steadily held. Sweet potatoes in light supply and very limited request.

Early Rose, River, cental, 65 @ 80
Peerless, River, — @ —
Reds River, 50 @ 60
Garnet Chile, Mission, 75 @ 1 20
Burbanks, Salinas, 60 @ 80
Burbanks, River, sack, 60 @ 80
Burbanks, Petaluma and Tomales, cut, 65 @ 75
Burbanks, Humboldt, cut, 65 @ 90
Burbanks, Oregon, cental, 70 @ 1 10
Garnet Chile, Oregon, — @ —
Sweet River, cental, — @ —
Sweet Merced, 75 @ 1 00

The Fruit Market.

Fresh Fruits.

Apples continued to hold undisputed sway of the fresh fruit market, outside of the citrus varieties. When it comes to quantity there is no lack of offerings, but in the matter of quality there is very little range, the bulk of the supplies now on market being rather ordinary. Most of the sales are within range of 35 @ 50c, some in tolerably good condition going at latter value. There are poor apples on market which will not command 30c, and are not readily placed at any figure. On the other hand, strictly choice to select apples are scarce and are in request at good prices, as compared with values ruling on common qualities. Fine Spitzenberg or fancy Greenings, four layers to the box and perfectly sound, are quotable at \$1.25 @ 1.50 per box, and in a small way to special trade would probably command a moderate advance on these figures. There are so few apples of fancy quality now offering, however, that any quotations which may be named for them are necessarily more or less nominal.

Apples, fancy, 4-tier, box, 1 25 @ 1 50
Apples, choice, 4-tier, box, 75 @ 1 00
Apples, fair to good, 50-lb box, 50 @ 75
Apples, common to fair, box, 30 @ 50

Dried Fruits.

Developments since last review in the market for cured and evaporated fruits have not been numerous or especially noteworthy. Jobbers and handlers generally report trade light, but as it is naturally a quiet time of year, and as the week was broken into by a holiday, not much activity was to have been expected. Values are without important change, quotations almost without exception continuing as last noted. Apples and Pitted Plums were inquired for, both being scarce, and market for these varieties may be said to be fairly firm. The demand for Prunes, which had been moderately active for a week or two preceding, seems to have been satisfied for the time being, although a revival of inquiry may be experienced in the very near future. Tendency on Apricots has been to slightly lower figures, mainly due to there being very few buyers at the moment, as stocks and offerings are not of large proportions. Peaches continued to be offered freely, with supplies of the same of quite liberal volume for this date. Shipments of dried fruit outward for the week include 27,300 lbs. forwarded per steamer Umatilla, sailing on the 20th for Victoria, B. C. Smaller quantities went outward to Central America and the Hawaiian Islands.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, per lb. 5 @ 5 1/2
Apricots, Royal, fancy, 6 1/2 @ —
Apricots, Moorpark, 7 @ 9
Apples, in boxes, 7 @ 7 1/2
Figs, fancy pressed, 8 @ 10
Nectarines, White, 4 1/2 @ 5
Nectarines, Red, 4 @ 5
Peaches, unpeeled, choice, 4 1/2 @ 5
Peaches, unpeeled, fancy, 5 @ 6
Peaches, peeled, in boxes, 9 @ 12
Pears, unpeeled Bartlett's, halved, fancy, 7 @ —
Pears, halved, unpeeled Bartlett's, 4 1/2 @ 6
Pears, quartered, unpeeled Bartlett's, 4 @ 5
Pears, peeled and sliced, — @ —
Plums, pitted, 4 1/2 @ 5 1/2
Prunes, in sacks, 40-50's, 5 @ 5 1/2
50-60's, 3 1/2 @ 3 3/4
60-70's, 2 1/2 @ 3
70-80's, 2 1/2 @ 2 3/4
80-90's, 2 @ 2 1/2
Above figures are on basis of 2 1/2 @ 3c for 4 sizes. Prunes in boxes, 1/4c higher for 25-lb boxes, 1/4c higher for 50-lb boxes.
4 sizes Santa Clara and equal, 2 1/2 @ 3
4 sizes San Joaquin and Northern, 2 1/2 @ —
Prunes, Silver, 5 @ 8

COMMON SUN-DRIED.

Apricots, ordinary, 4 @ 5
Apples, sliced, 3 1/2 @ 4
Apples, quartered, 3 1/2 @ 4
Figs, Black, 2 @ 3 1/2
Figs, White, 3 @ 4
Peaches, unpeeled, 3 @ 4
Plums, unpitted, 1 @ 1 1/2

The review given below of the dried fruit market in the East is from a New York publication of recent date:

The market has shown very little change on evaporated apples this week; offerings are light and with a steady demand desirable grades are held firmly at full prices, prime wood dried at 8 1/2 @ 8 3/4c, and wire-dried 8 1/2 @ 8 3/4c; choice to fancy job in range of 8 1/2 @ 8 3/4c, rarely higher for something exceptionally fine. Sun-dried apples are in light supply, but receiving little attention, and market generally weak, with prices somewhat lower on some grades. Chopped apples are in moderate request but held firmly, generally at 4c, though few if any important sales above 3 1/2 @ 3 3/4c. Cores and skins occasionally held at 2 1/2c, though 2 1/2c is all that can be depended upon, and that

only for very desirable stock. Small fruits of nearly all varieties are in limited supply, but with a slow trade market is easy and outside figures full. California fruit in quite liberal supply, but meeting an active demand when of attractive quality.

Apricots, Cal. Moorpark, 1897, per lb. 8 @ 11
Apricots, Cal. Royal, 1897, per lb. 5 1/2 @ 8
Peaches, Cal., 1897, peeled, per lb. 10 @ 16
Peaches, Cal., 1897, unpeeled, per lb. 5 @ 9
Pears, Cal., 1897, per lb. 5 @ 10
Prunes, Cal., 1897, per lb. 3 @ 8

Raisins.

Inactivity in the local market for raisins appears to be as fully pronounced as previously noted. Eastern centers are not heavily stocked, but seem to have a sufficiency for the present, mostly consigned and rain-damaged goods, which are selling at relatively lower figures than are nominally current here. Eastern dealers think they should be able to buy in this market at figures as correspondingly low as those East, and because they are not able to do so, they do not take hold in noteworthy fashion. In fact, some of them have the gall to ask for choice at the same figures, less freight, which rain-damaged raisins have been slaughtered at auction in the East.

F. O. B. FRESNO DELIVERY.

Imperial Clusters, per box, — @ —
Dehesa Clusters, per box, — @ —
Fancy Clusters, per box, — @ —
Boxes, London layers, 20-lb box, 1 00 @ 1 10
(Usual advance for fractions.)

Loose Muscatel, 4-crown, lb. 3 1/2 @ 4
Loose Muscatel, 3-crown, — @ 3 1/2
Loose Muscatel, 2-crown, 1 1/2 @ 2
Sultanas, lb. 1 25 @ 1 50
Seedless Muscatel, — @ 2 1/2
Dried Grapes, — @ 1 1/2

Citrus Fruits.

The orange market has not been so heavily stocked, especially with inferior qualities, as for some weeks preceding. Values ruled tolerably steady, with demand fair, inquiry running mainly to medium and large sizes of prime to select quality. There have been no noteworthy auction sales the past week, this method of disposal not having proven very satisfactory so far in this center. Lemons are in greater supply than the demand, and in other than a small jobbing way are difficult to dispose of at satisfactory figures. Limes are in limited stock and are firmly held.

Oranges—Navel, box, 1 00 @ 2 25
Seedlings, — @ 1 25
Lemons—Cal., select, box, 1 75 @ 2 00
Cal., good to choice, 1 25 @ 1 50
Cal., common to good, 75 @ 1 25
Limes—Mexican, box, 5 50 @ 6 50
Cal., small box, 75 @ 1 25
Tangerines, box, 75 @ 1 25
Grape fruit, crate, — @ —

Nuts.

Market is practically bare of almonds and walnuts, and values at present are nominal. Peanuts are in light supply, but prices are unchanged, demand not being very active.

California Almonds, paper shell, 8 @ 8 1/2
California Almonds, soft shell, 6 @ 5 1/2
California Almonds, hard shell, 3 1/2 @ 4
Walnuts White, paper shell, 7 @ 7 1/2
Walnuts White, soft shell, 7 @ 7 1/2
Walnuts White, Cal. standard, 5 1/2 @ 7 1/2
Chestnuts, Cal. Italian, 8 @ 9
Peanuts, Cal., fair to prime, 4 @ 4 1/2
Peanuts, Eastern hand-picked, 5 @ 6
Pine Nuts, 7 @ 8

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|----------------------|--------------------|----------------------|
| Flour, 1/2-sks. | 85,809 | 3,254,559 |
| Wheat, cts. | 140,515 | 8,172,810 |
| Barley, cts. | 86,698 | 3,904,244 |
| Oats, cts. | 18,320 | 482,294 |
| Corn, cts. | 6,690 | 226,398 |
| Rye, cts. | 330 | 28,128 |
| Beans, sks. | 14,929 | 480,363 |
| Potatoes, sks. | 26,945 | 772,425 |
| Onions, sks. | 877 | 83,350 |
| Hay, tons. | 2,136 | 93,091 |
| Wool, bales. | 5 | 49,482 |
| Hops, bales. | 24 | 7,717 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|----------------------|--------------------|----------------------|
| Flour, 1/2-sks. | 42,884 | 2,068,776 |
| Wheat, cts. | 180,311 | 7,951,883 |
| Barley, cts. | 60,520 | 2,749,003 |
| Oats, cts. | 259 | 11,782 |
| Corn, cts. | 99 | 29,250 |
| Beans, sks. | 987 | 264,169 |
| Hay, bales. | 350 | 56,172 |
| Wool, lbs. | 13,391,776 | 11,000,249 |
| Hops, lbs. | 3,396 | 1,081,882 |
| Honey, cases. | 28 | 6,493 |
| Potatoes, pkgs. | 645 | 168,154 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

New York, February 23.—California dried fruits, steady. Evaporated Apples, common, 5 1/2 @ 7 1/2c per pound; prime wire tray, 8 1/2c; wood dried prime, 8 1/2c; choice, 8 1/2c; fancy, 9 @ 9 1/2c. Prunes, 3 1/2 @ 3c per pound. Apricots, Royal, 5 1/2 @ 7 1/2c; Moorpark, 9 @ 11c. Peaches, unpeeled, 5 @ 9c; peeled, 12 @ 30c.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR WEEK ENDING FEBRUARY 8, 1898.

598,847.—OAR LOCK—Bonk & Erickson, Brandon, Or.
598,824.—BUILDING BLOCK—J. Brower, S. F.
598,857.—PIPE COUPLING—W. M. Coffee, S. F.
598,698.—COT—R. F. Crooks, Pomona, Cal.
598,861.—WINDMILL SHAFT—W. H. Delano, Newhall, Cal.
598,505.—ELEVATOR MECHANISM—H. B. Gale, S. F.
598,599.—OIL TANK—G. W. Gooding, Seattle, Wash.
598,509.—ADVERTISING FAN—W. L. Hall, Spokane, Wash.
598,660.—LIFTING JACK—E. & A. G. Hayford, Spokane, Wash.
598,518.—CAN SOLDERING MACHINE—A. Johnson, S. F.
598,519.—CAN TESTING MACHINE—A. Johnson, S. F.
598,603.—STUCKY HOE—C. H. Malkemus, Linden, Cal.
598,741.—CABLE GRIP—Norton & Rushing, Scribner, Cal.
598,579.—BEER FACET—Shields, Spinelli & Martin, San Jose, Cal.
598,581.—BOX COVER—R. M. Spencer, S. F.
598,685.—SCHOOL DESK—T. J. Thorp, Forest Grove, Or.
598,273.—DESIGN—GARDEN TOOL—A. R. Foutes, Oakland, Cal.
598,263.—DESIGN—DISPLAY RACK—M. V. Shafl, Los Angeles, Cal.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

To Fencers.

Write to Page Woven Wire Fence Co., Adrian, Michigan, and receive free of charge one of the prettiest and most instructive trade publications ever offered to the public. It deals wholly with wire fencing and will interest anybody who has fencing to do and who wants to do it at small cost.

Fine Poultry.

Attention is called to the advertisement of the Excelsior Poultry Yards, Kingburg, Cal., which appears under the heading "Breeders' Directory." The proprietors of these yards, S. P. Lindgren & Sons, were exhibitors at the last State Fair and prominent among the prize winners. Their exhibits of Buff Leghorns, Barred Plymouth Rocks and Black Minorcas were especially notable and won high praise from all competent judges. If you are interested in the poultry line, or wish to be, Lindgren & Sons are good people to correspond with.

"Planet Jr." Catalogue.

One of the exceptionally handsome catalogues of the season is that of S. L. Allen & Co. of Philadelphia, makers of the "Planet Jr." tools. Several new tools are offered, namely, No. 4 seed drill, No. 11 double-wheel hoe; sugar beet, cotton and corn, and spring-tooth cultivators, all of which are guaranteed fully up to "Planet Jr." standard. The catalogue will be sent free to all who write to No. 1107 Market street, Philadelphia, for it.

Will Be Ready for Business.

The Roderick Lean Manufacturing Co. of Mansfield, Ohio, has by no means been knocked out by the fire which destroyed their works early in the winter. The Lean people write that their loss on material is complete and that they shall have to buy new steel throughout for the building of this season's supply of harrows. Buyers need have no hesitancy in placing their orders, as everything will be in readiness to supply the demand long before the time for using harrows has arrived.

Liquid Smoke for Meats.

Messrs. E. Krauser & Bro. of Milton, Pa., makers of Krauser's liquid smoke for curing meats, will send free to any one interesting printed matter about methods of curing and smoking all kinds of meats. Meat smoked by the new method is said to have a genuine, delicious smoke flavor, it remains moist and in a perfect state of preservation, and is not infested with insects. The extract is made by distilling the smoke from hickory wood, and it is absolutely harmless. The makers, E. Krauser & Bro., of Milton, Pa.

A Wonderful Churn.

I have been in the dairy business all my life and have many times churned for a hour before butter would appear, so when I heard of a churn that would churn in a minute I concluded to try it. Every day for a week I used it, and not only could I churn in a minute, but I got more and better butter than with a common churn. This is very important information to butter makers. The churn works easily and will churn an ordinary churning in less than sixty seconds. I have sold two dozen of these churns in the past month. Every butter maker that has seen me churn in less than a minute bought one. You can obtain all desired information regarding the churn by addressing Mound City Churn Co., St. Louis, Mo., and they will give you prompt and courteous attention.
A DAIRYMAN.

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BROWN LEHIGH Eggs from my winners at San Francisco, Oakland and Sacramento. \$2.50 per 15; \$4.50 per 30. L. W. Mathias, Sacramento, Cal.

Patrons of Husbandry.

Co-operative Suggestions From Overseer Worthen.

It has been said that what we need is to co-operate and advertise. Organization, to be effective, must not only be complete, but there must be good management all along the line. For instance, for the Grange to fulfill its mission, its declaration of purposes must be carried out. "We purpose meeting together, talking together, working together, buying together, selling together, and, in general, acting together for mutual protection and advancement as occasion may require."

To be specific: We ought to use every State and subordinate Grange in the U. S. as media through which and by means of which our fruits, nuts, honey and other products should become known, marketed and consumed.

In urging the necessity and utility of opening up foreign markets I was a pioneer. I now turn my attention to the home market, and, as an officer of the State Grange, ask the attention and help of the Executive Committee in carrying out a plan partly outlined in the San Jose Mercury and hinted at in the Press in a recent number under the head of "Santa Clara Notes."

It seems to me that at the meetings of our National Grange, and at the annual or bi-annual convocations of our State Granges, great opportunities pass without anything being done towards opening up markets for the farmers' products.

At the last meeting of the Pennsylvania State Grange there were, it was estimated, 1000 delegates present. I will venture to say that not one pound of our prunes, for instance, was exhibited, not one person in that great State was put in communication with our fruit exchanges or fruit raisers.

To show what a single Grange in Illinois is doing, I will ask you to publish the following from the Orange Judd Farmer:

The recent session of the Illinois State Grange brought out some valuable discussions concerning co-operative buying. The gist of reports was about as follows: Schuyler county Patrons have both bought and sold produce together; bought flour in 100-barrel lots and saved \$80 to \$1 per barrel; earned a good per cent in oil, twine and farm machinery. To do this business, each farmer must be connected with fellow farmers, and the telephone is being quite generally used among the more successful co-operations. A telephone connecting with all the neighborhood need not cost over \$25. Farmers can save more money in a month than the Grange will cost in a year if they co-operate intelligently. Patronize local dealers, if satisfactory arrangements can be made, otherwise trade where the best terms can be made. Magnolia Grange has a very extensive telephone system, with a lady in charge at the office; members pay a stated sum per year. One telephone company connects twelve towns and has 125 instruments in farm houses; running expenses are 50 cents per month for each phone. Orders are collected by wire in a neighborhood and family needs ordered in bulk; flour by the carload from the mill, dried and canned fruit from California Patrons, buckwheat flour from Pennsylvania Patrons, and in other ways.

Another Grange reported it does thousands of dollars of co-operative business every year. Has saved \$500 in one year: buys coal, flour, salt, soap and twine by the carload; no trouble to buy and sell direct if it will go at it in a businesslike way. Galva Grange has a 120-gallon oil tank which is filled at the same price as are tanks at city stores. Patrons save more in oil alone than the Grange costs. Galva Grange owns thoroughbred stock and a thrashing outfit. One reported buying a rope for \$15 that would have cost \$45 at home. Another saved \$5 on five dozen brooms.

Several Granges in California are working on that plan to their satisfaction, so I am informed.

We want more Eastern Granges sending orders for "dried and canned fruits from California Patrons." I hope the press will agitate this matter, that the subordinate Granges under the direction of the State Grange will put into execution what has been hinted at. "A word to the wise is sufficient." G. W. WORTHEN.

Tulare Grange.

At the last meeting of Tulare Grange Bro. Berry spoke on the subject of holding next fall, in Visalia, a farmers' fair, whereat an exhibit of the varied products of Tulare county can be made. Bro. Berry moved that the Grange approve the holding of the fair, and that Fresno, Kings and Kern counties be invited to participate with and join Tulare county in getting up the fair. The motion was carried. All gambling and gambling devices and all other traps for the unwary shall be elimi-

nated and as much as possible prohibited during the fair.

The Secretary, Bro. Berry, read communications from Assistant Secretary of Agriculture Brigham and C. H. Castle, Representative from this district in Congress, stating that copies of the Year Book will be sent to him for distribution amongst the members of Tulare Grange. Tulare Grange has already received a supply of garden seeds for distribution amongst its members.

Copies of the organization papers of the Sonoma County Mutual Fire Insurance Company were introduced by the Secretary and ordered filed for future reference.

Bro. Tuohy read a report of the annual rainfall in the city of Tulare for the past five years from records kept by him and reported to the Signal Service Department.

An adjournment for lunch was then had. Tulare Grange has a lunch room, an adjunct to our hall. Coffee is made in the lunch room and a lunch, already prepared, is spread by the sisters with such taste and neatness as to tempt the most languid appetite.

After lunch all returned to the Grange room, where a discursive consideration of the damage done on the farm by squirrels was had. Every member present had some incident to relate of the damage done on the farm by these vicious pests and the desirability of their extermination. It was agreed that this can be accomplished only by concert of action, particularly as to time and manner, and Bro. Berry was requested to investigate how to bring this about and what, if any, legislation is needed.

As announced at the last previous meeting, the Lecturer now called on each and every member present to give his or her views as to what makes a model Grange. Bro. Berry read a well written and lengthy paper on the subject and Sister Gill read a shorter paper, but equally well written and interesting. [This paper will be printed next week.—Ed.] All members expressed themselves, and the free, social, intelligent manner in which all expressed themselves gave manifest evidence of the educational effects of our Grange meetings. Judged by the views expressed, a model Grange is that in which all the farming community living within a reasonable distance, and who are members of our Order—and farmers owe it to themselves as much as to the community to be members of the Order—meet where personal, partisan or sectarian bias or prejudice is not permitted to enter; where moral and educational principles are stimulated, inculcated and promoted; where sociability and good will towards each other pervade the atmosphere; where the opportunity for meeting for kindly greeting, participation in music, song and lunch give such a zest to the proceedings as leaves but little more to be desired, except, perhaps, the desire. None of our farming community should be absent from our meetings. Such, it is held, would be a model Grange.

It was agreed that Tulare Grange will have a picnic at Bro. Berry's on the first Saturday in April, and one at Bro. Jacobs' the first Saturday in May.

The special subject for consideration at our next meeting is "Transportation." The resolution of the National Grange on this subject will be found in the National Grange Quarterly Bulletin for the first quarter of 1898. J. T.

Horse Owners! Try

GOMBAULT'S
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A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

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First: Because they have the opportunity to explain their inventions personally and directly to the men who write the specifications and make the drawings, so that they will get all the inventor's ideas correctly and not be liable to make mistakes.

Second: In addition to this we have resident attorneys in Washington, of long experience and high standing with the office, who attend EXCLUSIVELY to our business before the Patent Office. You have, therefore, the advantage of personal consultation in the preparation of the case, and constant attention to your application after it has been filed.

Third: Time is saved. If you send to an Eastern attorney you must depend upon your ability to write a perfect explanation to a person three thousand miles away, wait until the papers can be returned to you for signature, and then send them again to your agent to be filed, if they are fortunate enough not to need further revision and return.

Experience in preparing patent applications here and in the East has proved to us that superior work can be done here.

We have been credited with obtaining more patents in proportion to the number of applications made by us than any other firm in the business.

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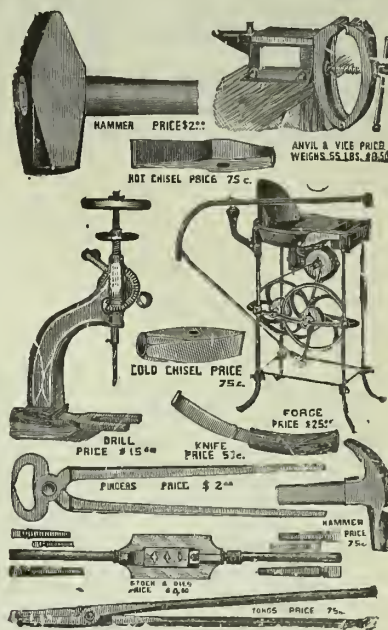
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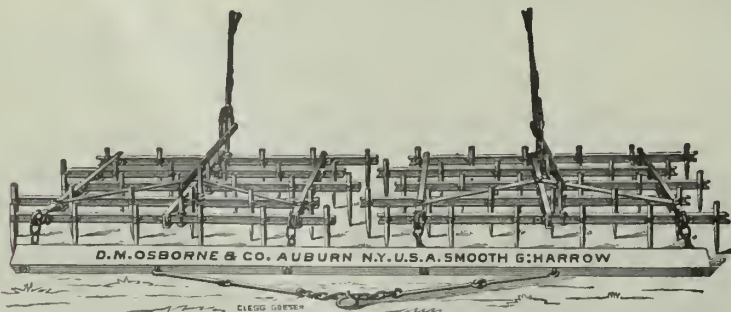
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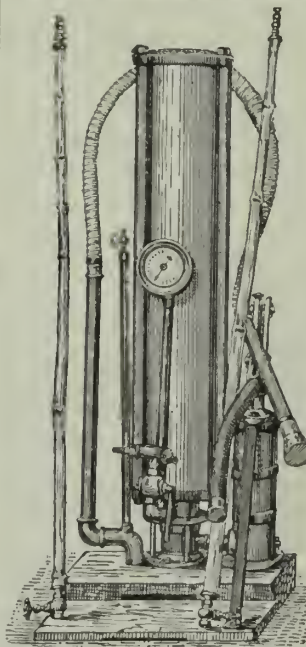
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THE PACIFIC RURAL PRESS

CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 10.

SAN FRANCISCO, SATURDAY, MARCH 5, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

Danger in Importing Rooted Nursery Stocks from Europe.

Written for the RURAL PRESS by NEWTON B. PIERCE, Assistant Pathologist, U. S. Dept. of Agr., Santa Ana, Cal.

Attention has recently been called to the needless practice of importing Myrobolan seedlings from France. Mr. Leonard Coates, in writing of this matter, says we should encourage home-grown stocks "even to placing a prohibitive tariff upon all fruit tree stocks except for experimental purposes." These views were evidently based on the imperfection in certain cases of the imported stocks and the wholly needless dependence and loss resulting from such practice.

There is another and equally important reason for the growth of our nursery stocks at home. In Germany, France and Italy, as well as in numerous other European countries having climatic conditions approximating those of the Pacific coast, is widely distributed a very destructive root fungus known as *Dematophora necatrix*, R. Hartig. This fungus is an omnivorous root parasite, being known to infest and kill nearly all kinds of orchard trees. It is especially destructive to the cherry,

pear, fig, mulberry, and many other common fruits, and has been known for years as a serious parasite of the vine. The accompanying engraving shows a fig tree destroyed by the parasite, as photographed by the writer in 1890.

The fungus has already been reported from several points in the United States, and has been found in California by the writer in a nursery of young apple and cherry trees growing on imported roots. In this instance it was discovered before any of the trees had been distributed, and without creating alarm many thousands of these trees were burned up on the ground and the land thereafter cropped with annuals not liable to distribute the pest.

These facts are only made public for the purpose of emphasizing the danger of importing rooted stocks to this State or to the country in general, and the danger becomes especially imminent if such stocks are brought from southern Germany, France, Italy or Spain. So far as is known, there is no fruit-tree root resistant to this fungus. It grows luxuriantly on the pear root, which is a stock commonly imported from France, and which root is so widely relied upon in California to fill the orchard where water or alkali would kill most other stocks.

The number of trees and vines annually lost in southern Europe through the action of this parasite is very great, but owing to the fact that extensive orchards are not so common there as here our losses would be much greater if the pest were once well established in the fruit growing sections of the State.

We already have a serious root fungus distributed from well north in Oregon to the Mexican line, which annually kills large numbers of fruit and nut trees in California, and those who have suffered from this cause in the past will well understand the need for this caution against the importation of a form even more destructive.

To avoid this disease it will not alone be necessary to discontinue the direct importation to this State of European grown roots, but it will be desirable not to purchase roots of nurserymen in the East who are importers of European stocks. The grounds where such nurseries are grown are apt to be infested, and to use stocks from infested grounds has nearly as great an element of danger as to purchase the imported roots. Nursery stock should be obtained from healthy sources in the East, or, better still, be grown from healthy stock within the State.

Pipe Laying in the Mountains.

We have previously given views showing the skillful ways in which our engineers carry large volumes of water over mountainous country. This is done for irrigation, hydraulic mining or town supply, as the case may be, and California has a very large mileage of pipe penetrating very pic-



FIG TREE KILLED BY ROOT FUNGUS NEAR NAPLES, ITALY.

turesque and uneven country. The engraving on this page is illustrative of this fact. The scene is in Trinity county, and the pipe is part of one of the largest water-transportation enterprises of that important mining region. The undertaking, in fact, consists of what is known as an inverted siphon 4852 feet in length, and the pipe is 30 inches in diameter. It is made of the best steel and was tarred and tested before being put in place. It is well anchored at all the angles, and is buried for a greater part of its length in a trench which averages about 3 feet in depth and 3 feet in width. The inlet is bell-shaped, 4 inches in diameter at the upper end, and tapers gradually to 30 inches. It receives the water from the bottom of the head box and is curved at the smaller end to come in line with the pipe on the hillside. The outlet piece is in the shape of a bonnet, 4 feet in diameter at the upper end, and discharges the water into the vertical end of the outlet box.

The water is by means of this inverted siphon carried across a valley about 1100 feet deep. The discharge point is about 100 feet lower than the inlet. This means of water carriage across depressions in large volume is of comparatively recent origin, and it has rendered feasible many enterprises which were formerly considered impossible.



PIPING WATER ACROSS A VALLEY IN TRINITY COUNTY.

PACIFIC RURAL PRESS.

Office, Clark Building No. 330 Market St., San Francisco, Cal.
Telephone, Davis 771.

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Registered at S. F. Postoffice as second-class mail matter.

ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, March 5, 1898.

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The Week.

Weather and Crops.

The rains of the week have been of much comfort and have restored confidence over considerable areas of the State; though other parts are still in the shadow. The first column of the table below shows that along the upper coast and the Sacramento valley and the lower levels of the San Joaquin and along the southern coast to the lower limits of San Luis Obispo county, the rains of the week have been generous and have accomplished a deep wetting of the soil. The upper San Joaquin and the whole section south of Tehachapi still needs heavier rains than have come hitherto. There is still a chance for abundant field products in all the parts where this week's rains were considerable, for we have still two rainy months and possibility of showers beyond that. In places which are still dry there are small chances of production, except on moist or irrigated lands, of which we have fortunately a very large area.

The following data for the week ending 5 A. M., Wednesday, Mar. 2, 1898, are from official sources, and are furnished by the United States Weather Bureau for the **PACIFIC RURAL PRESS**:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Rainfall to Date. | Total Seasonal Rainfall to Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|-------------------------|----------------------------------|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | 2.58 | 26.69 | 37.69 | 31.82 | 42 | 62 |
| Red Bluff..... | 2.39 | 11.99 | 21.99 | 18.96 | 42 | 74 |
| Sacramento..... | 2.50 | 8.54 | 14.67 | 14.72 | 46 | 68 |
| San Francisco..... | 1.02 | 7.32 | 19.03 | 17.50 | 46 | 67 |
| Fresno..... | .10 | 3.45 | 8.73 | 7.03 | 35 | 70 |
| San Luis Obispo..... | 1.18 | 5.14 | 18.63 | 12.61 | 46 | 76 |
| Los Angeles..... | .16 | 4.27 | 14.73 | 12.61 | 46 | 76 |
| San Diego..... | .00 | 3.38 | 10.17 | 8.07 | 48 | 70 |
| Yuma..... | .00 | 1.26 | 4.87 | 2.69 | 44 | 84 |

Free Market Work.

The outcome of the free market convention last week was the appointment of a permanent committee to represent the producers, as follows: W. P. Cragin, E. F. Adams, John Swett, W. Overhiser, Russ D. Stevens, J. M. Moore, S. S. Peck. Mr. Adams was made chairman and Victor L. O'Brien secretary. This committee has held a meeting this week and named sub-committees, who will attempt to harmonize the several interests related to the projected market. A campaign of education under the auspices of the general committee will soon begin.

Rural Mail Delivery.

Free delivery of mails in rural districts is to be extended and still further tested in Santa Clara county. The West Side district is immediately to be covered by carriers and, probably, a little later on the system will be broadened to include the vicinity of Los Gatos. The continuance of the experiment here, in the face of its abandonment elsewhere,

is due to the fact that conditions in the Santa Clara valley are more favorable than at any other place in the United States. How long the delivery will be continued in this special way cannot be foretold, but it is possible that it may be maintained permanently as an object lesson and as a means of determining social and other tendencies of the system. It is, indeed, a happy fortune for the Campbell and West Side orchardists to be chosen as the subject of so interesting a study.

The Produce Markets.

Weaker conditions in the European grain markets, combined with a better local outlook, have resulted in the shaving of half a dollar per ton from the price of wheat in San Francisco. The rains have probably had more to do with it than any other influence. The condition of growing grain crops has been wonderfully improved, but it is still too soon to talk about the harvest as a thing "assured." In the San Joaquin valley the moisture is still insufficient, and in all districts still more rain will be necessary for the maturing of crops. Generally speaking, there is every reason to be hopeful; but there are considerable districts in the San Joaquin valley to which this remark does not apply. Enquiry develops the fact that about 150,000 tons of last year's wheat available for export is still on hand; but at the rate it is now going, the bins are likely to be clear before the new crop begins to come in.

There has been little movement in dried fruits during the week, and, such as there was, has been through rather curious channels. For example, 36,000 lbs. have been despatched to Australia, 18,000 pounds have gone to South America and 10,000 lbs. to London via Panama. These goods were from supplies in the hands of jobbers; and in the general market there has been almost no movement worth speaking of.

In the stock market, there is a very notable firmness in beef and an advance is generally expected. Owing to the advance in cost of feed and to the unusually poor character of this season's range, a good deal of stock is being taken out of the State. The better outlook for wool is making flock owners hold on to their sheep and the effect is manifest in higher prices for mutton. Hogs, on the other hand, are easier in price, owing to the fact that receipts are just now very heavy.

Butter and eggs are in abundant supply and are as low as they are likely to be throughout the season of green feed. Young poultry is stiff. For details, see market pages.

Cattle Quarantine.

The following letter from the Secretary of Agriculture to Mr. J. R. Hebbon, president of the Monterey County Stock Raisers' Association, is published in the last issue of the *Salinas Index*:

Mr. James R. Hebbon—DEAR SIR: I am in receipt of your letter of the 5th inst., stating that your section of California has not received the usual rainfall this year, and that unless you have good rains within thirty days cattle must be moved or they will starve. You also state that there is an abundance of feed in the northern part of the State and in Oregon and Nevada, but on account of the quarantine established by this department you cannot avail yourselves of it. I regret the condition of affairs which you describe, and should be pleased to do anything in my power to avert the losses which you fear. I have been informed that since the date of your letter there have been more or less abundant rains in your State, but do not know whether they have been sufficient in your section. I have consented to allow cattle to be shipped from the quarantined district of California to the quarantined district of Texas, in response to a request of certain stock owners of your State, and I should also be glad to consent to the movement of cattle to the northern part of California, providing arrangements can be made for isolating them. I could not, however, consistently grant permission for such cattle to go into other States, such as Oregon and Nevada, where the cattle are subject to splenic fever.

I note your statement that you do not know of a case of splenic fever or contagious disease in the county in which you live, and therefore you conclude that no injury will be inflicted upon any other locality. I regret that your conclusions from the facts stated are not in accordance with our experience with the disease named. Cattle do not die of splenic fever anywhere in the infected district except in rare instances, but they do carry contagion with them, which destroys cattle in other sections, although they themselves are in apparent health.

There is conclusive evidence that the part of California included in the quarantined district is infected with splenic fever, and that cattle from that section are liable to spread the disease among susceptible cattle in other States, consequently you can see that I would not be performing my duty under the law if I permitted such dangerous cattle to be shipped from one State to another, except in the case of shipment to Texas, where they would go into a similarly infected district, where the cattle are not susceptible. Very respectfully,

JAMES WILSON, Secretary.

Washington, D. C., Feb. 16, 1898.

Weather and Crops.

SUMMARY OF THE REPORT OF THE U. S. WEATHER SERVICE FOR THE WEEK ENDING MARCH 1, 1898.

General Summary.

Except in the extreme southern portion of the State, frequent showers have occurred during the week. In the extreme northwest the rainfall was more than 1 inch in excess of the normal; in the northern portion of the Sacramento valley about 1½ inches above the normal, and in the rest of the valley about ¾ of an inch. In the San Joaquin valley the rainfall was below the normal. South of the Tehachapi the deficiency in rainfall for the week exceeds half an inch. The temperature has been about normal over the entire State. On the whole, the week has been good for growing crops. With abundant spring rains, even those districts which have had deficient rainfall may produce fair crops; in all other districts, owing to increased acreage, good growing weather and timely rains, there is every prospect of a large yield. Fruit trees are coming into bloom. In some localities almonds and apricots are in full blossom and other fruits budding.

SISKIYOU.—Seeding progressing rapidly. Early-sown wheat has a good start and is doing well.

SHASTA.—Farmers and fruit men feel sure of good crops. Early-sown grain looks well; acreage same as last year. Almonds in heavy bloom; other fruit trees well budded.

SAN JOAQUIN.—Rains did great good to all crops.

CALAVERAS.—Seeding practically over; acreage larger than last year. Wheat and barley look well. Prospects better than last year.

MERCED.—Moderate rain; grain looking well; prospects encouraging. Wheat and rye growing nicely, but to insure a good crop more rain is needed.

STANISLAUS.—Grain and feed growing nicely. Farmers still seed; with spring rains in abundance, will have fair crop. About half as much wheat sown as last season; some wheat up on gravelly and sandy land.

KERN.—Crops doing well; seeding discontinued; decreased acreage of wheat.

FRESNO.—No rain at Firebaugh, very little at Huron. Light rains at Fresno have improved crop conditions.

KINGS.—Dry north winds. Unless rain comes soon grain crop will be a failure.

TULARE.—Warm and seasonable weather. Crops need soaking rain.

BUTTE.—Seeding over. Almonds, peaches, apricots and plums in bloom.

YUBA.—Seeding over, except late barley. There never was a larger acreage of grain growing in this section (including Sutter county). Condition of crop excellent. Orchards doing well. buds heavy; apricots and almonds in full blossom.

GLENN.—Good rains and grain growing nicely; farmers are confident of good crop.

SOLANO.—Heavy rains very beneficial to growing grain. Crop prospects never better than at present.

SACRAMENTO.—Heavy rains. Crops doing nicely. Seeding finished; larger acreage than last year. Wheat looks well, with prospects of large yield.

YOLO.—Heavy rains brighten prospects for large fruit crop. Almonds and apricots now in bloom. Grafting now on. Wheat all sown; acreage same as last year.

COLUSA.—Seeding over. Larger acreage sown this year than last. Wheat doing well, and, with necessary spring rains, will have an excellent crop.

SONOMA.—Heavy rain. Good crops of grain and hay assured. Outlook for fruit good.

NAPA.—Heavy rain. Pruning orchards. Prospects good for heavy yield of hay, grain and fruit. Seeding finished; acreage same as last year; condition of wheat sown, good. Almonds in bloom.

ALAMEDA.—Rain greatly benefited growing crops. Grain promises a good crop. Peas and potatoes doing well; all fruits blossoming.

CONTRA COSTA.—Seeding finished; acreage about the same as last year. Present condition of wheat less favorable than last year.

SANTA CRUZ.—Seeding over. Grain acreage much greater than last year. Wheat doing well with prospects of a large crop.

SAN BENITO.—Acreage seeded to wheat and barley about the same as last year. With an unusually wet spring, grain will make a crop, but otherwise, no grain and little hay.

MONTREY.—Cool and cloudy with light showers. More rain needed for crops.

SAN LUIS OBISPO.—On eastern side of range about two-thirds of the plowed land has been sown. Grain has strong roots. Crops look well.

SANTA BARBARA.—Moderate rains. Grain already sown doing well; more rain will insure hay crop.

LOS ANGELES. (Bassett) — One light shower. Grain in damp lands doing well but need rain for meadows. (Duarte) — Warm and cloudy with good rain Thursday. (Los Angeles) — Peach and apricot trees beginning to blossom. More rain needed. (Palmdale) — Crop conditions unimproved; grain in west end of Antelope valley withering for want of moisture. (Pomona) — Warm and dry; grain suffering.

VENTURA.—Moderate rains. Much ground reserved for sugar beets.

ORANGE.—Grain on dry adobe land needs rain.

SAN BERNARDINO.—Warm. Valleys dry. Heavy shipment of oranges.

RIVERSIDE.—Dry and warm; grain needs rain badly.

SAN DIEGO.—Continued dry weather. Grain needs rain badly and will yellow unless moistened. Oranges in prime condition.

EUREKA SUMMARY.—Conditions during the week very favorable for stock, grain and fruit.

LOS ANGELES SUMMARY.—Light rains fell north of Orange county. Will help grain, but copious rains needed to mature crop. Warm weather bringing out fruit buds fast. Almonds blooming earlier than usual.

PRICE OF GRAIN BAGS.—The directors of San Quentin prison have fixed the price on grain bags manufactured at San Quentin, for the season of 1898, at \$5.30 per hundred. This is slightly under the cost of production plus 1 cent. The directors made an order that no sale exceeding 5000 bags should be made to a single party. This, the directors believe, is a strict construction of the Ostrom act, which they intend to abide by. The receipt of orders for grain bags is not large as yet.

AGRICULTURAL REVIEW.

CALIFORNIA.

Butte.

EGG-KEEPING PROCESSES.—Every person who keeps hens finds the nests crowded with eggs during the spring months, and in the valleys of California the hens are active by the middle of February. How best to process the eggs when plentiful and cheap, that they may be kept a few months, has become a study. A few of the methods of packing eggs dry for keeping have been tried at the New York Experimental Station and reported upon. The eggs were all wiped when fresh with a rag saturated with fat or oil in which had been mixed some antiseptic, and were then packed tightly in salt or bran. Eggs packed during April and May in salt, and which had been wiped in cottonseed oil, to which had been added boracic acid, kept from four to five months, with a loss of nearly one-third, the quality of those saved not being good. Eggs packed after the same preliminary handling in bran were all spoiled after four months. Eggs packed in salt during March and April, after wiping with vaseline, to which salicylic acid had been added, kept four or five months without loss; the quality after months was much superior to that of ordinary limed eggs. These packed eggs were all kept in a cellar, the ordinary temperature of which varied from 60° to 70° Fahrenheit, and each box was turned every two days. Little difference was observed in the keeping of the fertile or unfertile eggs, and no difference was noticeable in the keeping qualities of eggs from under different rations.—Oroville Register.

Fresno.

THE Reedley Exponent says there is need for a fruit packing bouse at that place, and proceeds to demonstrate the fact by quoting the Reedley shipments, which were not as large, of course, as they would have been under the stimulus of a packing house. The shipments were as follows: "Raisins, 27 cars or 876,375 pounds; dried prunes, 7 cars or 238,100 pounds; dried peaches, 2 cars or 73,200 pounds; total, 1,187,675 pounds. Oranges, 3 cars or 36,565 pounds. The Valley road took three cars of oranges and two cars of dried fruit to tide water, making a total shipment from Reedley of forty-four cars of fruit."

Kings.

JOHNSON GRASS REMEDY.—Many and various experiments have been made with a view of finding a remedy that will destroy the pestiferous vegetable nuisance called Johnson grass or evergreen millet, but with little success. Now comes W. L. Erricsons with a dead shot, which he claims will utterly destroy both Johnson and Bermuda grass, which is at least worth the experiment. The proportions of his formula are one pound of arsenic and three pounds of soda dissolved thoroughly in ten gallons of water. Then sprinkle until the grass is wet, about like a heavy dew. If not too rankly set, the second application, he claims, will kill every bit of it. A third application will destroy the very worst cases of either of these persistent pests.—Hanford Journal.

Los Angeles.

THE deciduous fruit growers are still working on the proposal to organize a co-operative cannery in time to utilize their crop of the present year. There seems to be a determination to adopt some means for handling the crop to better advantage than has been done in the past few years. A private cannery in Pomona offers a good market for a few varieties of very choice fruit, but between those varieties and the more common ones there is a vast difference in price, and it is extremely desirable that a better market be created for poorer varieties of fruit, or that they give place to the best varieties.—Pomona letter in Los Angeles Times.

Riverside.

HORSE AND MULE MARKET.—Ben Beal writes to his brother Lee that he recently sold to Government agents near Medford six head of mules, weighing 1100 pounds and upward, at \$90 per head. Mr. Beal also states in his letter that parties living in his vicinity sold eleven head of horses at \$65 per head.—Lakeview Examiner.

San Bernardino.

BEET SEED AGAIN.—We notice that the ideas we have frequently expressed, that this country with its rapidly growing beet-sugar industry should be independent of foreign countries for its beet-seed supply, are recognized even in Europe, where each of the sugar-producing countries endeavors to grow its own supply of seed independent of its neighbors. Recent correspondence from France says: "Repeated experiments have shown that the seed of the country, everything taken into consideration, is superior to the imported beet seed, yet the annual importation increases. Home growers are alarmed at these conditions, and it is said that if Germany should forbid the exportation of its beet seed French growers could not meet the manufacturers' demand. There is a proposition to increase the duty and thus possibly bring about some change for the better. The annual consumption of beet seed in France is 7500 tons. There is a tendency for the factories to produce their own feed; thirty-five have put this into practice."—Chino Champion.

ANOTHER VIEW OF THE GOPHER BOUNTY PROJECT.—There is usually a method in the madness of the *Times* Index, but its latest idiocy, the advocacy of a bounty on gophers, is altogether without reason. There is equally as little sense in the support as in the scheme itself. Should the supervisors adopt the absurd plan, which they will not do, it can have no perceptible effect on the quantity of gophers in the country. The people who would go into the gopher business for the bounty would naturally not be very patriotic, and would make their search for the animals not in orchards and grain fields, where they do the most damage, but in the brush and thickets, where they are comparatively harmless, but where they abound in greatest numbers. * * * The gathering of gopher scalps as an industry will hardly prove profitable, but it might serve to while away the weary hours and to brighten the languid spirits of a statesman who had grown hase in an unsuccessful chase after a hubble of fame or a seat in Congress.—Press.

Tehama.

RAVAGES OF WILD FOWL.—As a result of the law prohibiting market hunting of ducks and geese, passed by the last Legislature, the birds are so numerous in the Sacramento valley that the farmers are having considerable trouble with them. They come up the sloughs, feeding on grain at night, and moving farther up each evening, completely destroying the fields over which they pass. They are being poisoned with strychnine in some sections. The law will probably be repealed by the next session of the Legislature. Its passage was secured by the coterie of San Francisco club sportsmen who own immense preserves along the bay, and has benefited no one but them.—Red Bluff People's Cause.

Yolo.

R. C. KELLS AT YOLO ORCHARD.—R. C. Kells of this place has accepted the position of superintendent of the Yolo Orchard Company's large orchard, five miles north of Woodland. This is one of the finest orchards in the State, consisting of 510 acres of bearing trees—apricots, peaches, prunes and almonds being the principal varieties. The orchard is splendidly equipped with all the modern improvements and machinery. The position of superintendent is a responsible one, and Col. E. J. DePue, president of the above named com-

pany, has made no mistake in selecting Mr. Kells to manage the affairs there.—Sutter Farmer.

San Diego.

RANCHERS under the flume have learned by costly experience the importance of taking water when they can get it. The company has a preferred customer, the city of San Diego, to which it is much more profitable to sell water than it is to furnish it to the farmers. The flume's watchword has ever been: "San Diego first at 5 cents per 1000 gallons, and the farmers last with whatever water can be spared at 1 1/4 cents per 1000 gallons." So, in view of the prospects of a dry season, it behooves the flume ranchers to omit no precaution that they can take. Especially should those east of La Mesa reservoir avail themselves of their present opportunity. While there is water running in the river they should not neglect the chance to irrigate their lands. At present the water flowing in the flume is only 7 inches deep, and very little has been stored in the lake.—San Diego Union.

Santa Clara.

FROM hay to prunes the barvest will be one of abundance.—San Jose Mercury.

Santa Cruz.

PAJARO VALLEY FRUIT NOTES.—The officers of the Pajaro Valley Fruit Exchange feel confident that empty boxes hearing their brand have been gathered up in San Francisco, loaded with poor quality fruit and then sold at interior points. A case was discovered at Fresno which pointed to such work, and investigation showed that the fruit had been shipped by a firm which had not done any business with the Fruit Exchange. All fruit packers should copyright and register their brands, and then they could prosecute and punish all persons who infringed on their labels or used the same with intent to deceive. * * * Sgobel & Day, fruit handlers of New York, write to Luke Opusich, a fruit packer of this valley, that Newtowns sold at auction in the English market this winter at an average of from 8 shillings to 13 shillings and 2 pence per box—or from \$1.90 to \$3.18 per box. Taking the season through, the average price was 9 shillings and 6 pence—\$2.28 per box. From this had to be deducted per box: freight to New York, 52 cents; reshipping expenses at New York, 5 cents; freight to Liverpool, 21 cents; marine insurance, 1 cent; commission, 11 cents—a total of \$1 per box, leaving \$1.28 net. This showing is apt to promote London shipments next fall. This firm advises that shipments be made earlier than they were last fall; that the apples should be there in time for the holiday trade. * * * The end of the apple-handling season is not far off, but stocks in the packing houses are larger than during preceding years, and the coast markets are not offering an encouraging outlet. Prices are low for this time of the year—the top prices for the best fancy apples running from \$1 to \$1.50 per box in San Francisco. A large crop in this State, heavy supplies from Oregon, and the dumping of all sorts of fruit trash in San Francisco, has kept down prices; and the excessive supply of trash has done much to cause people to drop apples and seek other fruits. All of the apples, excepting perhaps a few choice lots in cold storage, should be sold and out of market before April 1st. It looks as if Pajaro valley packing houses would have quite a lot of apples on hand at that time. Berries will be in market in April, and when they appear the apple trade will rapidly shade off. It is estimated that there are now about 100 carloads of apples in local packing houses. This calculation is based on packed boxes of merchantable fruit. Some of the packers have closed out their apples, but most of them have lots of stock on hand. One firm is reported to have about twenty carloads. The Missouri Pippin is the leader, there being at least 15,000 boxes in the packing houses. There are 8000 boxes of Newtowns, but they will work out. There are 7000 boxes of choice Newtowns in cold storage in San Francisco, and they will find sale. The outlook is not hopeful at present, but we hope some turn will take place by which all the stock can be quickly and profitably handled.—Pajaronian.

Solano.

TOBACCO IN VACA VALLEY.—For some time there has been more or less experimenting with tobacco growing in this valley and usually with remarkable success. In fact, samples sent from here to experts have been pronounced as exceptionally fine. Among those who have conducted experiments in this line is W. W. Smith. He has produced some very fine samples. We understand that several parties will try experiments in this line this year in different points in the valley and the surrounding foothills and the result will be watched with much interest.—Vacaville Reporter.

OUTLOOK ON GRAND ISLAND.—Grand Island farmers are happy creatures these days as the prospects are that they will have large grain crops, which will make the fertile island a veritable Klondike. The acreage sown to grain is very large. The bean acreage will fall short of former years.—Rio Vista News.

Sonoma.

THE Northern California Poultry Association has been organized at Santa Rosa with C. H. Schieffer president, G. A. Stone vice-president, Arthur Brown treasurer, Mrs. Mary Ellis secretary, Ed. Ellis, H. G. Matbias and Mrs. A. Brown directors. A show will be held at Santa Rosa in November. An Eastern judge will be employed and dates permanently set as soon as a judge is secured. A meeting will be held each month.

Sutter.

THE olive mill operated in connection with the Yuba City cannery has produced this season (its first run) about 400 gallons of pure oil, the bulk of which will be of extra good quality. Over twenty tons of ripe olives were used.

Yolo.

A FRUIT CANNERY is to be built at Guinda in the Capay valley. It will have a capacity for 60,000 cans per day, but it will not be operated to its full capacity until the Capay orchards are older—not for two years at least. Geo. L. Witter, Chas. C. Gurrie and F. C. Swete are the leading spirits in the project.

"Crops Assured."

TO THE EDITOR:—I think at least twice this season the newspapers have assured me that in Monterey county the grass crop at least was "assured." I'll tell you, Mr. Editor, how far crops are "assured" in this most favored part of the county, and I expect they are equally "assured" elsewhere. There has been altogether, in the part of the Carmel valley where my farms are, about five inches of rain this season, quite a large fraction of which fell in September, and did practically more harm than good. The rains that fell later were followed by such freezing weather that nothing grew of any value, and the pastures, as a rule, are still dry and bare. Much stock have died, and most of those remaining are weak and suffering. Personally, I was glad to give out cattle to farmers exceptionally favored by the showers, they to return half the survivors and half

the increase next year. The upper Salinas has been about as dry as a dust bin, and even around Salinas City it has been doubtful if any beets could be grown for Spreckels' new sugarie.

In my own orchard the rain has been barely enough to wet the ground five inches deep were it not for irrigation. I should deem my fruit crop anything but "assured." Of course, I know that "assurance" is the cheapest thing in the world in the offices of some of our "great dailies." The screaming assurance with which they impose upon a long-suffering public their wicked and puerile inflammatory shrieks about "vengeance" and "war," before having the remotest foundation in a single ascertained fact, would be something ludicrous were it not so mischievous and deplorable.

Those who look daily on the dry and dusty plains and the sere and thirsty hills on which crops are "now assured" by the newspapers will know how much credence to give to the war talk with which daily they infamously incite the public to a bloody frenzy. All for the sum of 65 cents a month, or 5 cents a single copy! What is international comity, what is truth or justice, what righteousness and peace, so the circulation of the yellow howler be increased? EDWARD BERWICK.

Pacific Grove, Feb. 27, 1898.

Notes From the South.

TO THE EDITOR:—Two topics have been matters of serious discussion hereabouts in horticultural circles for the past two or three weeks; and both deal with climate. That Jack Frost has made us some visits which might have been materially shortened to our advantage goes without saying, while our good friend Jupiter Pluvius, quite to the contrary, should have been more generous in the same direction. The result is a somewhat unsettled condition of things, and at the same time more or less unnecessary alarm. The late cold spell only again emphasized the fact that planting orange and lemon trees on the low lands is a hazardous undertaking. Orchards situated along the foothills and in the thermal belt have not been injured at all. Specifically, no one knows the exact damage that has been done—nor is it a matter of mathematical demonstration. In a general way, certain localities suffered from what Cardinal Wolsey termed "a chilling frost." The loss, however, will not affect the citrus industry as a whole, thanks to the present tariff. Prices seem to have an upward tendency, and hence it is safe to say that the crop will realize as much in money value as though it had experienced no "cold spell."

The second rainfall, however, is a more serious matter. Up to the present the precipitation has been meager in the extreme, being barely enough to bring forth a stunted coat of green on the hills and in the valleys. The price of hay and grain in consequence is popping up right along. The former at the present moment is commanding \$18 per ton in the Los Angeles market, while barley and other grains are ruling correspondingly high. This condition of things admonishes the orchardists to turn on the irrigation water freely and so soak, cultivate and prepare the ground as to enable it to sustain the trees over the summer drouths. This fact cannot be too strongly emphasized; nor can it in many localities be overlooked without serious consequences. For the past few seasons the rainfall has not been even average, and unless March brings copious showers there is certain to be hardships. Of course the precipitation has been more in the mountains than on the lowlands—hence the sources of water supply for irrigation are yet running full and afford opportunity to soak the land in that way. By so doing much can be done to forestall serious damage to bearing trees.

Naturally in a season of scant rainfall the stock growers suffer most severely. In the cow counties there is already evidence that in case it fails to rain cattlemen will reduce their herds rapidly to meet the contingency. The grazing has been lamentably poor and the upward tendency of hay and grain precludes the idea of stall-fed beef. Naturally the tendency will be for higher prices, but in the way of supplies there will be no suffering among the people, as there is a plentiful supply of the staple orchard and field products now in warehouse.

It would seem that the era of diversified farming has dawned upon southern California. Dairying, hog raising, poultry and other branches of an enlightened horticulture have made rapid progress during the past ten years. Especially is this true of poultry raising. No less than five first-class exhibitions of poultry have been held this year within a radius of 100 miles of Los Angeles. The interest thus awakened has been pronounced, and will result in stopping the importation of eggs and poultry from the Mississippi valley into southern California. The last exhibition to come off will be held in Santa Barbara on the 9th, 10th and 11th of March. It promises to be a considerable affair, as the business interests of the town have subscribed liberally to its support. This widening of our agricultural resources and possibilities may in large measure be attributed to the work accomplished by the Farmers' Institute and the several auxiliary Farmers'

Clubs, which are now a feature of most every locality.

The Orange Exchanges are about to be supplemented by similar organizations made up of the growers of deciduous fruits. Prof. A. R. Sprague is pushing the matter, and is really doing a splendid work. Many localities have already organized, and others are to follow. It is designed to control the industry and place it on an independent and paying basis. J. E. STRAW.

Los Angeles, Cal., Feb. 28, 1898.

Veterinary Advice.

TO THE EDITOR:—Should a thoroughbred Jersey calf of a solid dark color necessarily have a black tongue?
St. Helena, Feb. 20, '98. E. C. SPEAR.
Not necessarily.

TO THE EDITOR:—Will you please tell me if there is anything that will take out or kill grubs in a cow's back, and oblige
Clayton, Cal., Feb. 25, '98. A SUBSCRIBER.

Creoline, 2 ounces; whale oil, 4 ounces; oil spike, 1 ounce. Mix and apply once daily after washing.

TO THE EDITOR:—I will be pleased to hear Dr. Creely advise treatment for two of my horses. One, a four-year-old colt, has a bad blood spavin and thoroughpin on his leg, but it does not make him lame. If a cure is effected, will he have free action in that leg?

The other is a large work animal, who is lame in one hind leg. She does not move about much, but when made to trot she goes with a jerking or dragging motion as if the whole limb was stiff, but when walking the action is more natural. When standing still she keeps the leg forward or back and sometimes doubled up, with the toe of the foot resting on the ground, as if trying to hear as little weight as possible on it. There is a large oval lump on the inside of the leg at the thigh. Some people say it is rheumatism. Can she be worked while under treatment? The lameness came on about a year ago, and the animal has been in poor condition since.
Butte City, Cal., Feb. 21, '98. W. CLARK.

No. 1. As long as this horse is not lame it is advisable to let well enough alone. It can be removed by a truss and cold water bandages, with rest and a high-heel shoe, but will return when severely worked. Repeated blisterings of Bin iodide of mercury, with rest, will effect a cure; or call in a qualified veterinarian and he can tap with an aspirator, when a large quantity of synovia, a yellowish tinted oily substance, will escape. The sac can then be filled with iodine, a good cantharidis blister applied, and in three weeks it will have disappeared never to return.

No. 2. I could not hazard an opinion on this case, but the horse would do much better if he was laid up for a long period after being treated, as green grass and a good level pasturage can do more with a lame horse in many instances than most veterinarians.
DR. E. J. CREELY.

HORTICULTURE.

Dessert Prunes.

By Mr. FELIX GILLET of Nevada City, California, at the late meeting of the Northwest Fruit Growers' Association in Portland.

For years I have strongly advocated in California the preparing of a portion of our prune crop as dessert prunes, to be eaten out of hand; that is, uncooked, like figs, and I must say that a great many people who have had opportunities to sample the prunes that I have so prepared have proclaimed them to be superior to anything in that line ever tasted by them, and I assert that what one could do in California others could do. But no, California prune growers seemed to be contented with producing sun-dried stewing prunes, or are too lazy to prepare them under any other form or process, relying more on a protective tariff than their own efforts in finding a market for the enormous stock now produced in this State.

A Reminiscence.—About the time I was advocating the preparation of a portion of our crop as dessert prunes, the California Fruit Growers' Convention met at Santa Cruz on Nov. 18, 1890, when that very question was brought before that body and fully discussed by it. A few members justly claimed that there was an excellent but special market for the dessert prune in America; that we should go for it, and that it would be best to prepare such portion of our crop as is to compete with the French in the French method. But the majority of the convention did not see it in that light and sided with the author of an essay on the prune read in that convention, in which he expressed his opinion on that subject as follows: "The foreign secret of preserving and packing prunes is practically unknown to us, and they may keep it if they wish, as we do not need or care to know what it is."

Finally the convention, influenced by leading prune growers present, adopted the curious resolution, that America wanted only the stewed prune, and there was no use going into the subject of another. In other words that "sass" was good enough for the American people, that the French had a secret of their own, of which we were ignorant, in preparing those splendid dessert prunes of theirs, but we didn't care for it, and that therefore it was of no use to bother about other than "stewing" prunes. But right after the above resolution was

passed by the aforesaid convention, happened a very laughable scene, for just then Dr. John A. Stewart of Santa Cruz, an ardent advocate of the dessert prune, entered the convention with a ten-pound box of such prunes, raised and prepared by Felix Gillet of Nevada City, Cal., and as soon as they were laid on the secretary's desk a regular stampede of the convention took place, all the members rushing forward in a body to get a few samples to take home, and in an instant the prunes were all gone. So that convention voted the dessert prune down, but at the same time showed their appreciation of it in an unmistakable way.

A Suggestion for the North.—Taking all that precedes as an introduction to what I have yet to say in this paper on this very subject, it struck me that since California seems not to care for the production of such prunes, which have to be prepared with the aid of a drier, why could not the people of your great Northwest try their hand at it and find out what they might do in that line? I must say before going any further that I do consider but one prune as being fit to make a dessert prune, and that is the D'Ente, or French prune, as generally called on the Pacific coast; for in my judgment the Italian, Silver or any of the new large hybrids, rather plums than prunes, are unsuitable for making dessert prunes.

The curing of prunes by the sun, wherever it can be done, is, I must say, a simple, cheap and quick method of curing, and will remain so in California, but it is a fact that sun-dried prunes, though first-rate for "sass," make poor dessert prunes, for they are cooked too hard, and, as the pure juices contained in the flesh have not been properly developed, prunes so dried have but little flavor and are insipid sweet.

How to Process.—The rich juices of the fruit are only developed by strong and quick heat; call if you like the prunes so prepared "cooked," it does not matter so long as they taste fine. But if dried in the sun, first, to have the evaporation of aqueous matter contained in the fruit done quicker, the prune is dipped in a solution of lye water, and let me tell you that you can never make a dipped prune taste as nice as one that is not dipped, whichever way you cure it. Then prunes dried in the sun have naturally to become hard, for the drying of the pulp takes place only through the day and by degrees, that is, a little at a time and cooling off at night; the skin and the pulp next to it must be dried first; then the pulp next to that already dried has to be reached by the sun's heat, which has first to go through that portion already dried, and as the same process is repeated every day, finally the prune is dried hard; or if it is not and there is too much juice secreted around the pit it will not keep but get mouldy. It is only when submitted to a strong heat, like that of a drier, that not only the drying from skin to pit takes place at the same time, but that the fine juices of the fruit are fully developed, and if the heating of the prune is conducted with care it will remain soft and in a condition to be eaten out of hand; then if packed a short time after having been cured, in hermetically closed glass jars, after having been dipped in preparations generally in use, the prunes will keep indefinitely without sugaring whether shipped to a warm or cold country.

Varieties for Dessert Prunes.—I believe that it is within the means of the people of the Northwest to produce fine dessert prunes and also finer stewing prunes, by substituting the French prune altogether for the Italian. The French prune, as I understand it, has not been cultivated through your vast territory but on a rather small scale; the excuse of your people for preferring the Italian being that the latter bears with you larger crops. Now let me tell you that that view of the question is wrong, for I think you could produce a first-class French prune, in less quantities it may be, but that would bring you more remunerative prices and for which you would find a more ready market.

Trees of the French prune can be had genuine from every nursery on the Pacific coast, whether in California, Oregon or Washington, and I would suggest the planting of that prune in preference to the Italian or the grafting of the latter into the former.

Mr. Gillet's Manufacture.—And now to show your convention what I mean by dessert prunes or prunes to eat out of hand, uncooked. With the present I send you three 2-pound boxes of dessert prunes, raised and prepared by myself, as you may read on the label.

In 1891, the year after the California Fruit Growers' Convention passed the absurd resolution above referred to in this paper, I prepared 400 boxes of such prunes as those I send you, which I sold at 50 cents per box just to show the people of California that it was possible for us to produce dessert prunes, and at the same time enlarge the scope of of the prune industry, and with the overproduction of to-day it is time to do it.

I will add that the prunes I send you to be laid before your convention and for its members to sample, were not dipped in lye, blueing or glycerine, as it is commonly practiced in this State, but simply in clear, boiling water after having been cured; furthermore that the prunes were half cured under glass and finished in the drier, and that they were

cured without the least intention of making dessert prunes out of them, but through the same process as stewing prunes are cured by me.

Prunes in Glass.—The best way of preserving dessert prunes is in glass jars with a very broad opening, so as to permit the introduction of the hand to arrange the prunes nicely inside, that is by placing a layer of them against the sides of the jar, the middle being filled in with prunes as they come and gently pressed. For years the French have been using rollers to flatten prunes, which are no more "thumbed" now-a-days. Flattened prunes are used for the top layer in boxes and the outside layers in jars.

Tens of thousands of jars of dessert prunes are yet imported from France to the United States in one kilogram (2½ pounds) jars; they are prunes of 60 to 70 to the pound. The jars for exportation to the United States are made of common bluish-white glass. They sell at New York for 75 cents per jar. The finest French dessert prunes are packed in clear white glass jars, but none come to the United States; they are, like those I send you, 40 to the pound, and wholesale in London for 35 cents per pound.

Those of your prune growers who are raising French prunes might very well try their hands at producing dessert prunes or drying their stewing prunes the same way, for I am certain that French prunes raised in the Northwest but so cured will find a more ready market than Italian, Silver or any other prunes and at more remunerative prices.

The Pomelo.

By J. T. BEARS at the University Farmers' Institute at Porterville.

The pomelo and shaddock, known to pomology as *Citrus decumana*, are natives of India and China, and were first introduced into the West Indies from China in 1763 by Captain Shaddock, commander of a British man-of-war, and whose name has been given to the pear-shaped varieties. The original varieties were very inferior and worthless except for ornamental purposes, but, by careful cross-fertilization and selection of the best seedlings and our modern system of cultivation, are now very different from the present fruit. They were introduced into Florida from the West Indies a great many years ago, but were considered by the white people of no value except for ornamental planting. The negroes, being unable to remember their true name, and on account of the tendency of the fruit to hang in bunches or clusters, gave them the name of grape fruit, by which name they are commonly known. They are now considered by connoisseurs the *ne plus ultra* of citrus fruits, and their medicinal virtues are being proclaimed by some of the most eminent physicians of the Eastern States. A well known New York physician has said that the daily use of them for a few weeks will cure the worst case of dyspepsia. They are also highly recommended for rheumatism and several other ills.

A retired British army officer, who served several years in India, assured the writer that to cut the whole fruit, including the rind, into small pieces and put it in liquor made the best remedy they had found for malaria, which is so prevalent in that as well as all tropical countries.

Mr. Morris of the Kew Gardens, London, says: "They are nearly all larger than the largest orange and are uniformly of a pale yellow color. In texture the rind may be smooth or even polished. The pulp is pale yellow or greenish white, sometimes pink or crimson. The vesicles of the pulp (juice bags) are more distinct than in the orange, very juicy with a distinct but agreeable bitter flavor. The pith surrounding the segments possess more of the bitter than the pulp, but it is less agreeable, and on that account is never eaten. In shape the fruit varies a good deal. Some are quite globular, others somewhat flattened at the top and tapering below, forming a pear-shaped body. Even in the globular fruit the tree is more or less flattened."

Varieties.—The word pomelow, used in India, is supposed to be a contraction of "pomum-melow" (melon apple). The largest variety in India is said to be from 2 to 4 feet in circumference and weigh ten to twenty pounds. The best sort is a thin-skin red pomelo of the Bombay market. This is of a globular shape, juicy and of the color of raw beef. This description corresponds with our variety known as Tresca Blood. In California we have several varieties nearly all brought from Florida and ranging in size from twenty-eight to ninety-six to the box.

In the Eastern markets the most desirable sizes are those packing from twenty-eight to sixty-four to the box. The fruit being served, not whole, but in sections, the largest sizes are the most desirable and command the highest prices.

Previous to the 1894-5 freeze from 800 to 1200 carloads were shipped from Florida to the Eastern markets each season, mostly packed in barrels the size of flour barrels, and prices ranged from \$18 to \$24 per barrel. So great was the demand after the freeze that Eastern dealers ransacked the East and West Indies and other tropical countries, and what fruit they could obtain, although inferior to the

Florida fruit, sold for \$25 to \$30 per barrel and were sold by retailers as high as \$3.50 per dozen.

The Tree.—The tree is a rank grower, extremely early in fruiting and very prolific. From one tree, five years from the bud, we packed this season three and one-half boxes, and we now have a tree the same age that has at least four boxes of fruit still hanging to the tree. A small orange tree re-budded to the pomelo two years last September had two clusters of fruit this season—one of twenty-seven and the other of twenty-two—that weighed in the aggregate sixty-five pounds. Contrary to the general belief, the tree and fruit is not tender, and our experience this winter has convinced us that it will stand as low a temperature as the orange. As the fruit nearly all grows on the inside of the tree, it is better protected from the hot sun in summer and frost in winter; consequently the fruit is not deformed by the sun, and, being better protected than the orange, is not as liable to be injured by the frost. If reports of damage to the Florida orchards by the cold wave of Jan. 1st are reliable, it would seem that no variety of citrus fruit will be as profitable to the growers of California as this fruit, there being an increasing demand from year to year.

Citrus Culture.

By R. H. McDONALD at the Porterville Farmers' Institute.

The first important part of citrus culture lies with the nurseryman, for on him we have to depend for well-propagated trees. The buds should be obtained from the best groves and selected from trees that produce the finest fruit; by such means we procure a high-grade tree. Care should be taken in removing trees from the nursery so that the roots are not exposed to the sun. They should be carefully packed before shipping. Citrus trees should be transplanted during the dormant condition, for the shock to them is not so great while dormant.

Planting.—In planting I do not advocate digging a larger hole than will accommodate the tree. Great care should be given while planting, by seeing that the roots are kept moist and not exposed to the sun. The earth should be firmly pressed about the roots with the hand and the hole filled with warm surface soil, within three inches from the top. Then water should be applied immediately, which will settle the earth firmly around the roots. The holes should then be filled carefully. With proper care thereafter the tree is sure to grow. In irrigating a newly-planted grove, care should be taken to see that the water reaches the roots of the trees. It is often the case that water will not soak into the trees from a furrow. In that case the tree should be cut into with a shovel, letting the water to the roots. Then, after irrigating, when the ground will work up mealy, hoe them. In irrigating bearing groves, some say that water should not be turned on while the tree is in blossom. I believe that a citrus tree, from the bloom to the ripening of its fruit, wants continual moisture and no setback while fruit is developing. During the months of July and August the heat and evaporation is so intense that the strictest attention should be given. Any neglect at that time would be ruinous to the fruit.

Cultivation.—Citrus groves should be well cultivated, the ground thoroughly pulverized and deep enough to prevent excessive evaporation. As to fertilization: There ought to be put back in the soil each year what the tree takes from it. If the trees are kept in a healthy bearing condition I think light fertilization each year the best, because over-fertilization is apt to produce rough fruit.

After all the care in planting, cultivating, pruning and fertilizing, the most important of all is irrigation. By irrigation the great citrus industry of the State of California has been made possible, whereby thousands upon thousands of dollars are annually distributed among our people. The time will come when the surplus water from our great mountain streams will be caught up and distributed on the waste lands in our valley, when new homes will spring up, school houses will be built, and church spires point toward the heavens.

FLORIST AND GARDENER.

The Sweet Pea World and California's Place in It.

That California sweet pea specialists are still in the lead and that the leadership is spreading to other Pacific coast States, also, is seen in a letter which the world-wide sweet pea expert, Rev. W. T. Hutchins of Massachusetts, writes to the *American Florist*. The three originators of new varieties—Sunset Seed Co., C. C. Morse & Co. and M. Lynch—are all California growers, and mention is made also of an Oregon specialist. How their work ranks in the sweet pea world is clearly to be seen from Mr. Hutchins' allusions.

New Sweet Peas of 1898.—Twenty-five novelties in

sweet peas for 1898! So the list stands, with several counties to hear from. Personally I am not responsible for any additions to the list, not but what there are varieties of merit among them, but because it is unfortunate to swell the list at such a wholesale rate.

Mr. Eckford puts out seven, W. Atlee Burpee & Co. nine, Peter Henderson & Co. one; S. T. Walker of Forest Grove, Or., issues his first catalogue as a sweet pea specialist, and names seven that he thinks worthy of a place. Mr. Sam Hamilton gave the names to the two best on Mr. Walker's list. I suppose the Sunset Seed Co. will offer a very fine dark, satiny, indigo blue novelty, which they sent out for trial last year. Vaughan offers the three varieties of which Mr. Lynch let a little trial stock go last year, and which, having been on my catalogue, were counted in as 1897 novelties. And I understand that Vick puts out another double variety.

I have decided not to issue a list for 1898, although as an easy way to answer inquiries I have had the novelty list printed. My wish is to fall back into the ranks of impartial critics. I cannot say, as one sweet pea enthusiast said to me to-day, that I am disappointed in the entire novelty list for this year. It does not present as much originality of color as I hoped. But we must remember that we are now at a stage where we have had some colors only in name and are getting nearer and nearer to the genuine thing. Mr. Eckford claims, on the strength of a first-class certificate, to have now a bright orange variety. We have had orange rose, orange pink and orange salmon, but now there seems to be an advance in purity of color in this line. One of the finest sorts Mr. Eckford ever offered was Her Majesty, and this year he puts out a new bright rose self, which I shall expect to see is an advance on that grand sort. When I was at Wem he had the dark maroon color of Stanley carried up to greatly improved size, and now he offers his latest work on that color.

What California Does for Eckford's Varieties.—I thought at one time that if one should go to England and see Mr. Eckford's work he could report with a good deal of accuracy on the description of his novelties, but, although I took notes on the spot describing each of last year's set, not one of them seems to tally over here with my description. It seems strange to have the Sunset Seed Co. put Queen Victoria down as a third-class production that should be rejected. I considered it the finest thing in the whole set. It won abundant honors in England. It was a rich cream primrose, showing in its substance its black seed origin, and not betraying with any noticeable effect the latent fawn color that our climate seems to bring out. I am told that it broke here, as Countess of Aberdeen did the year before. Then I was enthusiastic about the new red of Salopian, inclining decidedly towards dark cherry. But much of it has seemed almost identical with Mars in this country.

I don't want to be cynical about these things, for I know that Mr. Eckford's work is grand. I would like to go in among his advance seedlings and get an ounce of true seed of about three first-class novelties each year and take that seed direct to California, and then add on the same number of the finest selections from American seedlings. Six real good novelties a year would excite our enthusiasm sufficiently.

Eckford's New List.—Mr. Eckford's advance set stands as follows: Prince of Wales, award of merit, R. H. S., a bright rose self of intense color; Lady Mary Currie, award of merit, R. H. S., and four first-class certificates, a deep orange pink, delicately shaded rosy lilac; Chancellor, four first-class certificates, standards bright orange, wings bright orange pink; Colonist, two first-class certificates, soft lilac, overlaid with brightest rose; Duchess of Sutherland, a pearl white, delicately suffused with white pink; Duke of Sutherland, first-class certificate, deep claret, wings bright indigo blue, the whole flower becoming bright indigo blue with age; Black Knight, a deep maroon self.

Morse's Work.—The Burpee novelties are sure to give satisfaction in respect to germinating, quality, and abundant bloom. The set this year gives us some genuine seedlings from the original crossing, done by C. C. Morse & Co. The stock sent out last year under the name of Burpee's American seedlings really gave us our first taste of Morse's hybrid stock, and now we shall have many fine things from it. Once get the secret of crossing Eckford's finest sorts and the product is a break into an unlimited field of new sorts. Our California growers, and especially Morse, are just getting into this rich field. And it is no easy question how to introduce this array of novelties. I have been in the sweet pea business for the fun of it, but I do not recommend this as a criterion for other folks. I can see honest, straight work behind every one of the twenty-five novelties this year; not one of them being as much of a fraud as my Columbia seemed to have been last year. The Burpee set will kindle enthusiasm for their splendid grandiflora size and lusty habit, as well as their novelty in color. The finest of all is Stella Morse, it's best guarantee being that the name has been held in reserve for several years till a variety worthy of this favorite daughter and sister could be produced. It is a beautiful novelty, a rich creamy buff, the edge

deepening into rose pink. I do not think that any one of the set will be disappointing.

A word about Pink Cupid. Its blushing cheeks are not due to any embarrassment it feels over the misfortune of White Cupid. It is a little cherub. I had no trouble with it. It germinates and blossoms perfectly and takes kindly to pot treatment.

Lynch's Varieties.—I am glad to see Lynch's Bride and Emily Lynch well spoken of. The former is such a fine white, and its germinating quality is so perfect that it ought to be generally tried. I could not pick out from it such large blossoms as Blanche Burpee showed, but it made up in quantity. And for a rich, warm effect I commend the Emily Lynch. It is really a remarkable introduction. Mr. Lynch has two or three more ready. Then Golden Gleam is a grand strain of Mrs. Eckford. It is a pity the stock is not more plentiful, for we want it in our shows.

Walker's List.—Walker's Coronet was a thing of merit, coming the nearest to an orange stripe. Its short stems were a defect. He is working on a Flambeau mixture, and the best things in it are some grandiflora stripes of ox-blood red. Peter Henderson & Co. have secured a novelty called Minnehaha from him, a fine selection from his Flambeau hybrids. The prospect for 1898 is bright. The reports indicate that the sweet pea shows will be more of a feature than ever.

California Grown Roses for Eastern Sale.

The superiority of the California-grown open-air rose bush over the Eastern article is receiving the clearest possible demonstration.

The Jackson & Perkins Co. of Newark, N. Y., speaking of their experiment in growing roses in California, advise the *American Florist* as follows:

We have sent about 150,000 young roses to California to be grown, and they are thus far doing very nicely indeed. These were all propagated in the East, but as soon as we get matters in a little better shape we expect to have the propagating done entirely in California.

Last Year.—We experimented with rose growing a little in California last year, sending 10,000 plants then. They came back to us with an amount of growth upon them that was perfectly surprising. La France, American Beauty and Mrs. John Laing, which are very slow growing sorts out doors at the East, and of which it is impossible to grow very strong plants even in two seasons, will, in California, make plants three feet or more in height in one season.

The bulk of our planting in California this season has been of the more moderate growing hybrid perpetual varieties. We also planted quite a quantity of hybrid teas and Bourbons, including Wootton, Etoile de Lyon, Malmaison, etc., and we are working up a considerable stock of forcing roses. We believe that we can get some fine, strong plants of these varieties and have them sent East from California ready for sale by about holiday time.

Clematis.—We are also trying about 40,000 clematis, believing that we can produce some exceptionally fine strong plants in California. There is nothing quite equal to the convenience and value of having water right at hand to turn on whenever it is needed, instead of having to depend upon rainfall.

Bed Propagation and Field Growth.—We do not believe that the plan of growing roses in California from field-rooted cuttings will ever be very successful, as it is altogether too uncertain. Occasionally a very good and fine crop can be secured, but more frequently one is obliged to cultivate and irrigate about three times as much land as is covered by the proportion of plants that live and grow. All of our roses will be grown from one eye cuttings, rooted in beds and transplanted to the fields afterward. We find that this makes a much more symmetrical, stocky and well-rooted plant than can ever be obtained from long field-rooted cuttings.

THE DAIRY.

Forage Crops for Home Dairies.

TO THE EDITOR:—I have been experimenting on a small scale for several years past with many different kinds of forage crops that have been and are still highly recommended by many of the Eastern seedsmen. Here are the names of some of them: Jerusalem corn, Sacaline, Crimson clover, Dwarf Essex Rape, Sand or Winter Vetch, Doura of several kinds, Kaffir corn and several kinds of millet.

I freely acknowledge that I have been greatly disappointed in all of them. I still maintain that alfalfa and corn fodder, according to my judgment, are two, at least, of the best forage crops that can be grown in this State, especially for men of small means and who, perhaps, like myself have at most only ten or twelve acres of land, the larger portion of which is in fruit trees. The gophers, however, are so very destructive here to alfalfa that I have

about given up the idea of trying to raise it successfully and have, therefore, for some years past raised corn, beets, squashes and winter pine-apple muskmelons for my cow, horse and hogs. I am fully satisfied that sweet-corn fodder, carefully cured, is actually worth, ton for ton, two-thirds as much for either a cow or horse as most of the hay that is raised.

Proper Curing.—I have found by very careful observation for many years past that a great many persons allow their hay to lay in the field too long after being cut, before even raking it into windrows, thus allowing the very life of it to be destroyed before stacking it or putting it into the barn.

This applies to corn fodder equally as well, as far as the curing process is concerned, especially in very hot weather, when it needs very careful attention in order to secure it in the best possible condition.

Forage Crops in Orchards.—Some of my friends in this vicinity have sowed wheat in their prune orchards this season, thinking no doubt it was good policy to raise two crops on the land instead of one in a single season. In fact, a friend of mine who has nearly ten acres in prune trees which he has sowed to wheat this year told me not long since that he sowed wheat last season among a few of his prune trees and that they seemed to do as well if not better than the others where no wheat was sown, and that he might just as well have raised \$200 worth of hay in his prune orchard last season. That his young trees did so well I have not the least reason to doubt, but I account for it from the fact that we had late spring rains and the ground therefore retained sufficient moisture later in the season than usual, and there was enough left after the hay was cut to enable the trees to make a fair growth, as they bore no fruit. For my own part, I think it is poor policy to raise a hay crop among prune trees, especially if they cannot be irrigated, and I shall note very carefully the result and give it to the readers of your valuable paper in due time.

Red Clover (Trifolium Pratense).—I have been thinking for some years of trying to raise red clover, but as I have never seen any growing in this valley—in fact, not in the State—except in a wild state, and as I made a complete failure some years ago in experimenting with crimson clover, I concluded to make some inquiries of an old friend of mine, who is living in the foothills of El Dorado county and has a most beautiful place, mostly in fruit trees and vines on a hillside facing the east, if I remember rightly. (I remember prospecting for gold there in the spring of 1852.)

I imagine he thinks I am a pretty good hand at asking questions, which were not a few, but I wanted to get the facts in the matter. Nevertheless he very kindly answered all of them, besides giving me other valuable information, which I sincerely hope will be as interesting to the readers of your paper as it is to me.

He sowed his clover seed the latter part of February on four acres of land among his large pear and apple trees, putting on fifteen pounds of seed to the acre, and irrigated it, after it was well up, about every ten days. His first crop grew about three feet high and made ten tons of the very choicest hay. His second crop was about two feet high and made six tons, making a total of sixteen tons. He said his trees seemed to do better than formerly, notwithstanding the fact that he did not irrigate them after his second crop of clover.

Summary.—From the foregoing information received from him as well as other very interesting matter, I am able to adduce these facts, which I will endeavor to make as plain as possible for the benefit of all your readers, especially those who have small orchards in the foothills of the mining counties, where they could without any doubt have as good success in raising clover as my friend had and thereby save the money that they would otherwise have to pay for hay, which generally commands a good price there, as well as to save a great deal of time in hauling it, as will be shown before I close this article:

In the first place my friend has bought on an average eleven tons of baled hay for the past twenty-six years, at a cost of \$13 a ton, or a total of \$3718. He hauled it—a ton at a load—a distance of eight miles, making a round trip of sixteen miles, part of the way over a rough mountain road and consuming at least for each load eight hours of his time and team of two horses. In twenty-six years he and his team actually traveled 4576 miles, which would take them 286 days at eight hours a day to perform the service, to say nothing of the exposure to the hot summer's sun and at times almost blinding dust.

I have no doubt that my esteemed friend felt highly elated, as well he might, over his "immense clover crop," as he saved \$143 and had sixteen tons of the very best of hay at his very door, costing him comparatively but little labor and \$9 only for seed.

Calistoga.

IRA W. ADAMS.

[This is very suggestive. In the foothills the eastern red clover deserves much wider attention. With irrigation it may be grown in orchards with profit both to the grower and to the soil, as Mr. Adams shows. But clover requires summer moisture, and

on lands where winter rainfall has to be conserved for the trees clean culture is best for success.—ED.]

THE POULTRY YARD.

Experimental Points on Poultry.

The Utah Experiment Station has just issued a bulletin in which are reported results of poultry experiments conducted at the station during the year ending November, 1897. A number of experiments are reported, and in some cases the results are very positive. They include tests of old hens and pullets for egg production; of the value of exercise; of the value of crossing pure-breeds; of the relative egg-laying qualities of Brown Leghorns, Barred Plymouth Rocks, Light Brahmas and a Brahma-Leghorn cross. The annual food cost per fowl of the different breeds, and the yearly production of eggs per hen were important features of the experiments. The relative value of old eggs and fresh eggs for hatching was also tested. The bulletin, a copy of which may be obtained free on application to Director Luther Foster, Experiment Station, Logan, Utah, is summarized as follows:

Profitable Hens.—There is little profit in keeping hens three and four years old at the market prices of food and eggs in Utah. The profit in feeding young hens, or pullets, was six times greater than in feeding old hens three and four years old. This conclusion does not apply to two-year-old hens and hens more than four years old. Leghorn pullets hatched in April gave better results than those hatched in late May. The profit was about one and a half times greater from the April hatched than from the May hatched.

Exercise.—The exercised pens produced twenty-six eggs per fowl more than the pens without exercise. The three exercised pens produced eggs at a food cost of 5.3 cents per dozen; the pens without exercise at a food cost of 6.5 cents per dozen. The three exercised pens averaged a profit per fowl during the year of 84 cents; the non-exercised pens, 58 cents. Pen 1, representing egg production under the most unfavorable conditions, except as to ration fed, cleared 2½ cents per fowl during the year on the cost of food. Pen 4, representing egg production under the most favorable conditions, cleared during the year \$1.26 per fowl; this would have been increased considerably had the eggs laid before the experiment began been counted. In the one case there was a profit on feed of 5 per cent; in the other, 203 per cent. Exercise had no apparent influence on the weight of the fowl; the lack of exercise did not add to the weight of the fowl. The non-exercised pens produced eggs weighing about 3 per cent more than the exercised pens.

Old and Young.—The eggs produced by the old Leghorn hens weighed about 5½ per cent more than those produced by the Leghorn pullets. The eggs produced by the Light Brahma pullets weighed 11½ per cent more than those produced by the Leghorn pullets. The Barred Plymouth Rock pullets' eggs averaged about the same as those of the Leghorn pullets.

Feeding.—In two out of three pens exercise produced a larger consumption of food. The exercised pens made a better use of the food than those without exercise. It required 22 per cent less food to produce a dozen of eggs with exercise than without it. The results are strictly conclusive that exercise aids digestion and assimilation of food. The chief value of exercise, therefore, seems to be in preventing a waste of food.

Fertility.—Exercise apparently reduced the percentage of fertility in the eggs. The percentage of fertility was highest with the early hatched pullets and lowest with the old hens, though the results are not conclusive. The fertility of eggs averaging five days old was 300 per cent higher than of eggs averaging twenty-two days old.

Capacity.—The results noted above were secured from what was considered a good ration fed alike to all pens. Practically the same ration was fed throughout the year. The conclusions, therefore, must not be accepted if a different ration is used. The results seem to indicate an average capacity for a Leghorn pullet of 200 eggs per year, with intelligent care and feeding. No advantage was discovered in crossing the Brahma and Leghorn.

Money in Hens.—The following interesting paragraph is taken from page 15: From a study of table No. 3 it will be seen that the only correct answer to the question, "Is there money in hens?" is, "It depends." It depends on the kind and amount of food consumed, the number of eggs laid and the price of eggs when laid. The statement that there is no money in hens would doubtless be true, if pens 1 and 9 only were considered. A satisfactory answer, however, could not be obtained by taking the average of all the pens. To prove such a statement, it must be shown that there is no money in hens under the best possible method of treatment. The record made by pen 4, the ideal pen of the lot, is the only

one that should be consulted. We see that for 62 cents worth of food this pen produced eggs worth \$1.88 per fowl, a profit of \$1.26 on an investment of 62 cents. Of course this result will vary as the cost of food and the price of eggs vary. The money result can be figured out in any locality, knowing the average food consumption and the product in eggs.

A Transaction in Eggs.

Northern papers give at great length an account of the venture of Chas. Vest, a Portland man, who has just returned from Dawson City (Klondike) with a big venture in the egg trade. Mr. Vest left Portland last October, taking with him 1743 dozen frozen eggs. He broke and packed them in tin cans holding one gallon each, or six dozen. The cans were sealed, frozen and put on ice. They weighed 2025 pounds in cold storage. With one man to help him and his dogs Mr. Vest hurried the eggs up to Sheep Camp and buried them in the snow. He put four cans in a sack and tied the sacks over the dogs' backs. Each dog carried twenty-eight pounds in this way. Once over the summit the cans were piled on sleds, pulled by the dogs and the journey continued. Upon reaching the mining camp he sold out his eggs for \$6321 cash.

Who Will Give a Remedy?

TO THE EDITOR:—Would be greatly obliged if some poultry raiser would give, through your columns, a remedy that will exterminate the chigre. Have been troubled with them dreadfully and all efforts so far have proved futile. Whitewash, sulphur, insect exterminator and tobacco have all been used, but to no effect.

E. W. SYLVESTER.

Geyserville.

[Here is a chance for helpful notes from several readers.—ED.]

THE SWINE YARD.

Selection, Care and Management of Hogs.

NUMBER II.

By ELIAS GALLUP of Hanford at the University Farmers' Institute at Selma.

A Farrowing Pen.—You may ask me how I keep my fat sows from overlaying their pigs. I have a pen or room for farrowing sows, 14x16 feet, with doors on each end and windows on the side. The room has a floor, and around the outside of the room, six inches from the floor, I have a board 1x12 inches securely fastened in the shape of a bench. This prevents the sow from crushing the pigs against the wall; and if the weather is hot, you will find the pigs will go under this board, as all very young animals generally prefer some dark or secluded place to sleep, and if the weather is cold they crawl under for shelter.

A pen of this kind can be easily constructed in the open field, have four portable panels with the benches attached to them, and you can easily make a pen around the sow and young litter. This style of pen I have also used for a great many years, and it has saved for me many valuable pigs.

I prefer a pen with a floor, as the sow is apt to root holes in the ground, and I find by much experience that a sow with a ring in her nose will be very careful when she lays down. If she has no ring in her nose she will root her bed, imagining that she can make it better, and will drop herself down carelessly, often catching and crushing her pigs.

Feed after Farrowing.—After farrowing for the first few days I feed but little. Warm dishwater with wheat bran and a few handfuls of grass is all she will require; and if she has a disposition to move around, open the door and let her go out and walk around. In fact, I prefer to have them go and come when they please, and from that time until the pigs are weaned the sow should be regarded chiefly as a milker and fed and treated as a dairy cow—that is, being fed for a record.

Clean, comfortable quarters and an abundance of nutritious and succulent foods are indispensable. There is nothing better for little pigs, and no feed equals sweet milk. The hog and the dairy cow should go together.

Pigs and Sunshine.—Always remember to give the young pigs the benefit of the morning sun. The hog is an animal that keeps close to nature and does not bear confinement well. I am a firm believer in grass for growing hogs, and good green grass is the best and cheapest feed that enters into our animal product. It is especially adapted to the needs of the brood sow and litter when judiciously combined with grain. I will repeat what I have said before: Do not neglect to give the young pigs the morning sunshine; it is the cheapest and most abundant, yet many times neglected factor in growing young pigs.

Feed for Young Pigs.—I would have the pigs at

weaning time as fat as I could get them. God has made the hog an omnivorous animal. You can feed them nearly everything with good results. The best way to keep them in good condition is to give them a variety of food. I will say to you farmers that four-fifths of all the diseases of swine undoubtedly get their start from the poor starving pig tugging at the poor sow. They should be kept growing, as idleness is the root of many evils.

If the hog raiser has a dairy in connection with his farm, the skim milk helps the pigs greatly, and if he is engaged in diversified farming the wheat stubble and refuse fruit from the orchard and vineyard can be fed with profit. Perhaps no plan of making the farm pay equals this. There is a profit from the dairy farm, the stubble field, the fruit orchard, vineyard and the hogs. It is the true independent system, and, as low prices compel economical management, it should be adopted more and more.

You ask how I would feed my pigs to have them, as I have said, fat at weaning time. When the pigs are three to four weeks old they will commence eating. Then I arrange for the pigs to slip into an adjoining pen and eat by themselves—that is, I set out a side dish; it should be food that is easily digested and not too bulky. Remember the pig has a framework to grow and should have feed adapted to that end. There is a great deal in the practical business of growing pigs that can only be learned by close observation and experience.

Brains in the Swine Yard.—It does not require that a man must have a college education, but he must have a good, level head and he must have a liking for the business. An artist was once asked what he mixed his paints with to produce such good colors. He replied, "I mixed them with brains." It requires good common sense to raise pigs as well as anything else.

Value of Improved Swine.—Many farmers hesitate from year to year in regard to breeding up their swine, some, no doubt, fearing the outcome of such a

venture, while others are deterred from such a venture by the additional expense that is incurred by the breeding of better hogs. It is safe to say that nine out of ten of those who breed and raise hogs are fully aware of the fact that breeding none but the best is the most profitable kind of hog, yet the majority hesitate and halt between two opinions until they become disgusted with the business and conclude that there is nothing in raising hogs.

Too many men want a sure thing before they venture in any direction, and for that reason alone do we find so small a number of business men of any kind. Especially is this true in regard to farmers. Plodding along in the footsteps of their fathers and grandfathers seems to be the limit of their ambition. The deeper the rut the harder it is to get out of it.

With all the advantages staring them in the face that breeding the best grade of hogs has, they still plod on raising hogs that are worth less than those of their neighbor just because they have not backbone enough to break away and get out of the ruts. Some say any hog is good enough and anything is good enough for a hog. Satan has a first mortgage on all such ideas.

Brother farmers, the advice I would give you is to keep your pig eating and growing, and he will mind his own business and will not have time to hunt up disease or get into your neighbor's cabbage patch. Raise better hogs! The scrub is out of date. He is only good with his long nose to lift the yard gate from off its hinges. The pure-bred beautiful Berkshire, the sleek Poland-China and the stately Duroc-Jersey, if well cared for, will assist in educating your sons and daughters and lift the mortgage from off your farm.

Porcine Philosophy.—The swine business is one of the leading industries of this great State. The hog is one of the great wealth producers that never goes on a strike. Pork producers must enter with renewed zeal upon swine improvement, and this can be

done only by enlisting the whole class of farmers in its advancement.

There is too much carelessness and apathy. When the church wishes to infuse new zeal into its members, it gets up a protracted meeting and brings its members together so often as to keep their minds alive to its interests, and if the pork producers expect to conduct their business most profitably, all patrons must be brought into harmony; every patron must feel a personal interest in the adoption of every improvement.

These needed improvements cannot be understood by the farmer generally without frequent meetings and discussions. These meetings should be conducted in an informal way, inducing, as far as possible, a general expression of opinion, explaining the urgent necessity for an improved product under the present more critical market. If these meetings could be held every few months, and the farmer required to attend, they would soon develop into most effective schools for the education of swine breeders. There is every motive to induce attendance at these meetings—a common interest as close as that of limited partners—and it would be considered strange that the members of a partnership should not feel interest enough to attend consultations for their own benefit.

The pork producer should have a clear explanation of change in market for swine products. That meat which satisfied the public a few years ago would now pass only, in some localities, as second or third rate, and prove a loss to the producer. They would then see that the greatest attention to detail must be given, and they would heed the warning and make the needed changes.

The pork packers have this laboring oar of reform in their own hands, and they have every interest to set to work diligently to enlist every farmer in it by bringing them often into consultation. They should imitate and insist upon those frequent meetings, and they will thus become missionaries to push on the good work.

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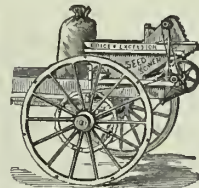
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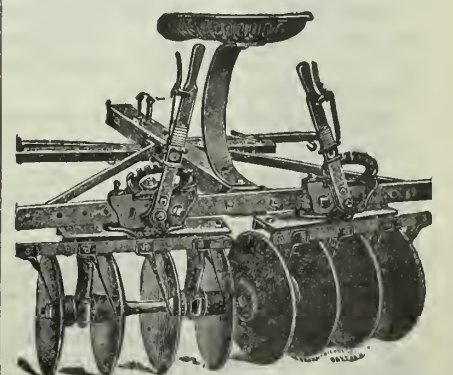
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THE HOME CIRCLE.

A Fable.

The mountain and the squirrel
Had a quarrel;
And the former called the latter "Little
Prig."
Bun replied,
"You are doubtless very big;
But all sorts of things and weather
Must be taken in together,
To make up a year
And a sphere.
And I think it no disgrace
To occupy my place.
If I'm not so large as you,
You are not so small as I,
And not half so spry.
I'll not deny you make
A very pretty squirrel track;
Talents differ; all is well and wisely put;
If I cannot carry forests on my back,
Neither can you crack a nut.

—Ralph Waldo Emerson.

The Little Arm-Chair.

Nobody sits in the little arm-chair;
It stands in a corner dim;
But a white-haired mother, gazing there,
And yearningly thinking of him,
Sees through the dust of long ago
The bloom of the boy's sweet face,
As he rocks so merrily to and fro.
With a laugh that cheers the place.

Sometimes he holds a book in his hand,
Sometimes a pencil and slate;
And the lesson is hard to understand,
The figures to calculate;
But she sees the nod of the father's head,
So proud of his little son,
And she hears the words so often said:
"No fear for our little one."

They were wonderful days, the dear, sweet
days,

When a child with sunny hair
Was here to scold, to kiss and to praise,
At her knee in the little chair.
She lost him back in her busy years,
When the great world caught the man,
And he strode away past hopes and fears
To his place in the battle's van.

But now and then in a wistful dream,
Like a picture out of date,
She sees a head with a golden gleam
Bent over pencil and slate;
And she lives again the happy day,
The day of her young life's Spring,
When the small arm-chair stood just in the
way,
The center of everything.

—New York Times.

Cousin Marcia's Valentine.

Franklin Hoppin thought his cousin
Marcia was the very prettiest and
cleverest girl in all East Roseboro, and
he was not far from being right.

She was certainly pretty. Her eyes
were bright and sparkling, and when
she smiled—which was about every
two minutes—she showed teeth which
were small and even and milky white
as pearls.

In school she was conceded to be the
"smartest" girl in A class, though she
was only fifteen years old. Some mem-
bers of her class were two years older
and a head taller than she.

Marcia would demonstrate a problem
in arithmetic with a glibness that filled
the dull-witted ones with admiration,
amounting almost to awe and veneration.
One of her compositions, "A
Crisis in the Nation," had been pub-
lished in the East Roseboro Gazette,
over her full name, Marcia Deborah
Hoppin.

But Marcia was good-natured and
kind, as well as clever. She would
often help the dunce of the school with
the problem he brought despairingly to
her, and she explained them in a way
which did not in the least suggest con-
ceit or conscious merit. She was born
with a taste for "figuring"—that was
all; she did not feel that there was any
particular virtue in herself about the
matter. Besides, she really liked to
help others.

Franklin was bright, too, and he was
not so far behind his cousin in the class.
But he was not so good as Marcia—he
had a hasty temper. When he became
angry, the boys used to say he was
"Hoppin mad."

Franklin had another bad habit—he
didn't like to get up early in the morn-
ing.

He lived on a farm, so that there
were many little chores for him to do

before he went to school. If he did not
rise early, he would be late for school
or leave some of his chores undone.

"Franklin!" called his sister Jennie,
one cold morning in February.

"All right," said Franklin, snuggling
under the bed clothes and making no
motion to get up.

Five minutes passed.
"Franklin Hoppin, why don't you
get up? Father's beginning to look
black."

"I'm coming," Franklin answered,
crossly, and in two minutes he was fast
asleep again.

He woke up suddenly, choking and
gasping for breath. Jennie had cop-
iously sprinkled his face with ice-cold
water from a dipper she held in her
hand. Jennie retreated, laughing. She
knew that Franklin was very angry,
and she sought safety in flight.

"Father told me to," she called out
up the stairway, her voice shaking with
laughter. "It isn't my fault. I had
to do what he said."

Franklin answered nothing. He was
white with anger.

"I'll pay you for this, Miss Jennie,"
he muttered to himself.

At the first opportunity he gave
Jennie's ears two or three sharp cuffs
that brought the tears to her eyes.
Their father happened to come into the
kitchen at that moment.

"Franklin, let Jennie alone!" he
said, sternly. "She only did what I
told her to do. To-morrow if you don't
get up when you're called, it shall be a
whole dipperful of water."

Franklin knew that his father always
ment what he said, so he rose with
exemplary promptness after that. But
he had not quite forgiven Jennie, and
he meant to "pay her back" in some
way.

The thirteenth of February came,
and he had not yet paid her back.
Then a bright idea occurred to him. He
would send her one of those cheap
caricatures, crude in color and worse
in rhyme, called "Comic Valentines,"
which were displayed in great profusion
in the village store window. He would
put it into a thick, square envelope,
and Jennie would imagine it a valentine
with silk fringe.

"Just the thing!" he said to himself,
though his conscience was not quite at
ease. "Next time she'll think twice
before pouring water on my face."

He had already bought one with
fringe for his Cousin Marcia. There
was a pink-cheeked, smiling girl's face
on it, which Franklin fondly imagined
looked like Marcia.

At five o'clock the next day, Jennie
came home from school in a gentle
flutter of excitement. She had stepped
into the post office on her way, and she
held tightly in her hand a thick, creamy
envelope.

"I think it's a valentine," she an-
nounced, triumphantly, to Franklin
who stared hard at his boots and tried
to appear unconcerned.

He was beginning to feel heartily
ashamed of himself, and did not care
half so much as he had thought to see
his sister's smiling eyes change to tear-
ful ones. It would be a very cheap
revenge, after all.

"Just like a girl, not to open it and
see!" he exclaimed, impatiently.

Franklin wanted to "get the thing
over with," as he phrased it.

Jennie got a pair of sharp scissors,
and slowly cut the end of the envelope,
taking good care not to snip off too
much, less its precious contents should
be touched.

"Oh, my, how pretty it is!" she ex-
claimed, as she drew it out. "Why,
Franklin, it's the one you had in the top
drawer of your bureau for over a week!
Oh, you good, good boy! I was sure
you meant to give it to Cousin Marcia."

Jennie threw her arms impulsively
round Franklin's neck, and gave him a
grateful, sisterly hug.

"I'm sorry I sprinkled that water on
you," she said, penitently. "Perhaps
father wouldn't have made me do it if
I'd only said I didn't like to."

Franklin looked dazed, and took his
sister's caresses very passively.

He had made a big blunder, and per-
haps even now his cousin Marcia was
opening the other valentine! He had

not disguised his hand writing, as he
had done on the envelope Jennie held
in her hand, for he had intended to
leave his sister in doubt as to who had
sent the caricature. What would Mar-
cia think of him?

"Have you been rummaging about
in my bureau drawers?" He asked,
gruffly. He felt nervous and harassed,
and turned to vent his displeasure on
the person nearest—poor Jennie, as
usual. How often have I told you
not to?"

"I only wanted to put some of your
Sunday collars there," Jennie ex-
plained, looking slightly aggrieved, as
she certainly had a right to look. "I
couldn't help seeing it, for it was lying
right on top of your handkerchiefs.
I used to take a peek at it every day,
after I found it was there, and wished
it was mine. I didn't know it was for
me, or of course I wouldn't have glanced
at it again. It's very pretty! Did you
give Cousin Marcia one, too? You
know you said you were going to."

"Yes," groaned Franklin.

"I don't believe it's any prettier than
mine," said Jennie, with gentle elation.
"Do you think it is, Franklin?" she
asked, anxiously.

"No I don't," replied poor Franklin,
desperately. "It isn't half so pretty.
Say, Jennie, did—did Marcia go into
the postoffice with you?"

"No. She was in a hurry to get
home. She said she didn't expect any
valentines, anyway."

Franklin breathed a sigh of relief.
Perhaps it wasn't too late to get it
back, even yet, and destroy it. If he
only hadn't confessed to Jennie that he
had sent it!

She would ask Marcia about it, and
they would wonder if it had been lost.
Perhaps Marcia would ask the post-
mistress to hunt for it. His cousin
would surely find out then that he had
taken it out himself. But never mind
—something certainly must be done,
and at once, to prevent Marcia from
getting possession of that miserable
valentine.

When our disturbed Franklin drew
near the postoffice the early February
dusk was slowly creeping over the
quiet village streets. Some one was
tripping along lightly and swiftly be-
fore him. It was his Cousin Marcia.

Franklin grew dizzy with suspense
and anxiety. How should he prevent
Marcia from going into the postoffice?

"Marcia!" he called out, desper-
ately. "Cousin Marcia, wait a second!"
Marcia turned round, smiling.

"Oh, it's you, Franklin," she said,
pleasantly. "I didn't see you."

"Where—where are you going?"
faltered Franklin.

"To the postoffice," answered Mar-
cia. "Mrs. Finch says there's a letter
for me. It may be a valentine, you
know."

"I don't believe there's any valentine
for you," said Franklin bluntly.

Marcia laughed.

"I don't know why not," she insisted.
"To be sure, I've never had one; but
that's no reason I never shall. Per-
haps it's only a letter, then, if you are
so sure it's not a valentine. Are you
coming in?"

"No-o," declined Franklin. "I've
got to go right home."

"I'll be right out again," Marcia re-
joined. "Don't run away. If it's a
valentine, I'll let you see it."

She was back in a minute, though it
seemed like a half-hour to Franklin.

"It is a valentine, I'm sure," she de-
clared, in a tone of elation. "The
envelope is too large and pretty for an
ordinary letter. You are a false prop-
het, after all, Cousin Franklin."

"Why don't you open it and see?"
asked Franklin, yielding gloomily to
the inevitable.

Marcia looked at him in surprise.

"What's the matter, Franklin?" she
asked. "You seem to be down in the
depths." "You haven't done anything
that disturbs your conscience, I hope?"
she added, gravely.

Marcia could be wonderfully serious
at times, notwithstanding her frequent
and merry laughter.

"No," said Franklin, "That is to
say—yes, I have! Look here, Marcia!
you'd better tear up that valentine. I

sent it, and—it was a mistake. I didn't
mean it for you!"

"Oh, of course, if you meant it for
some one else!"

Marcia held out the envelope with a
little laugh, which she tried in vain to
make light and unconcerned; but she
felt slightly hurt, for Marcia, sensible
girl though she was, was not above a
little natural pique.

"Why should I tear it up?" she
added. "It isn't too late to correct
your mistake, is it?"

"I'd better tell you all about it, I
think," said Franklin, in despair. "It's
a comic valentine. It was for Jennie;
but I got it into your envelope, some-
how. I'm awfully sorry—I am, hon-
estly; but I'll get you another one, to-
morrow."

"Thank you!" said Marcia quietly.

She felt like breaking into a peal of
laughter, when she saw Franklin's woe-
begone face; but he seemed genuinely
distressed, and she checked herself.

"Is your sister, Jennie, fond of comic
valentines?" she asked, demurely. "I
should have been angry, I must con-
fess, if this one had been really meant
for me."

"No," admitted Franklin, ruefully,
"I'm afraid she isn't. I sent it out of
spite. That's the worst part of it. But
I've been paid back for my meanness.
If you won't tell her, she won't know
anything about it. I promise you I'll
never send another, as long as I live. I
couldn't stand the strain on my nerves.
I'm half crazy now."

Marcia laughed outright then, and
Franklin knew that she had forgiven
him.

"If you'll keep that promise," she
said, "I'll never breathe a word to
Jennie. I think comic valentines are
the most detestable, most unkind things
that were ever invented. Don't you,
Cousin Franklin?"

"Yes, I do," said Franklin, emphatic-
ally.

And she knew that he meant it.

Then Cousin Marcia tore her first
valentine into tiny fragments and scat-
tered them to the winds.—Antony E.
Anderson.

Gems of Thought.

There is a politeness of the heart,
and it is allied to love. It produces
the most agreeable politeness of de-
meanor.—Goethe.

Activity is only beautiful when it is
holy; that is to say, when it is spent in
the service of that which passeth not
away.—Amiel's Journal.

It is in his own most vigorous and
noble action that man feels within him-
self, as it were, the very pulse of the
divine energy.—George S. Merriam.

The mind requires not, like an
earthen vessel, to be kept full; con-
venient food and aliment only will in-
flame it with a desire of knowledge
and an ardent love of truth.—Plutarch.

God having designed man for a
sociable creature, made him not only
with an inclination and under the
necessity to have fellowship with those
of his own kind, but furnished him also
with language, which was to be the
great instrument and cement of
society.—Locke.

Moral energy grows with the obsta-
cles against which it is measured; and
the putting forth of moral energy as
the purpose of our lives is the highest
exemplification of humanity. When
we put forth the highest moral energy,
then we touch the stars of life.—Felix
Adler.

Man postpones or remembers. He
does not live in the present, but with
reverted eye laments the past, or,
heedless of the riches that surround
him, stands on tiptoe to foresee the
future. He cannot be happy and
strong until he, too, lives with nature
in the present, above time.—Emerson.

A man only understands what is akin
to something already existing in him-
self. We are all visionaries, and what
we see is our soul in things. We re-
ward ourselves and punish ourselves
without knowing it, so that all appears
to change when we change. . . .
Every soul has its climate, or rather
is a climate.—Amiel's Journal.

Fashion Notes.

Narrow chinchilla borders trim some of the simple but elegant costumes being prepared for Lenten wear this season.

Black satin blouses are very fashionable, and if smartly made up give considerable style to the gown, especially if a girdle of the satin, enriched with gold and jeweled buckles, be added. These are much newer than any of the host of shot or flowered silks so very long in fashion.

The spring shades of blue are Roman, hyacinth, silver, Napoleon and barbeau or blue bottle. The greens are in many tints with fanciful titles that have clear emerald tints, and also the deep Russian green, becoming to so many women, willow, the golden green tint, and leaf in three different shades. Gismonda again appears, the purple slightly deeper than that of Parma violet, and much like the amethyst are plum shades that have been so popular in costume cloth and millinery this winter.

A recent trousseau includes a lovely gown of perforated cloth. The color of the cloth is daffodil yellow, the braided design about the open work pattern is done in a deeper shade of yellow, and the underlining is of pearl white satin. The gown is simply made and trimmed with ecru lace and Parma violet velvet.

A negligé in the same outfit consists of a loose robe of ciel-blue silk entirely veiled with white lace. It is trimmed by a flat collar of blue velvet, laid over a border of ermine, and at the bust this collar becomes a long stole, reaching to the hem of the skirt. The large nœud on the bust is also a fashion effectively used on negligés and tea gowns, and presents a convenient way of arranging a full front.

One or two of the shades in green and blue, the tawny bronzes called Siam, and the rich, golden Cleopatra dyes in russet, brown and tan, are among the most attractive colors in broadcloth, ladies' cloth and similar fabrics used for day costumes this winter.

Many new cloth gowns are shirred all about and down below the hips. Some of them are even so gathered at intervals as to divide the whole length of the petticoat into bands of shirings, interspersed with puffs, the whole finished off by a ruffle at the bottom.

The ribbon going twice about the neck and then tying in front in a bow, or preferably a four-in-hand, has evolved into elaborate silk ties, with plaited or ruffled ends, which are so knotted that one end is above the other, and both show. In this same class are the plaid and striped ribbons and ties which grow more and more plentiful as spring approaches, although just now the stripes are in the ascendant.

Among pretty things in lingerie is the house jacket—tea jacket or breakfast sacque, whatever you may choose to call it—and it is prettier than ever this season and more varied in style. Nun's veiling, silk, fine nainsook, lawn and French flannels are the materials employed. Nun's veiling in pale blue silk, plaited, makes a pretty sacque. The plaits meet in the middle of the back, where they fall a little below the ribbon belt, which fastens at either side with a bow. The front, which is all plaits, is several inches longer than the back and hangs loose from the shoulders. Around the shoulder is a fichu of white chiffon with wide, very creamy lace on the edge, which falls in points to the hem in front. Some of these jackets have a blouse in front and fit in at the sides; others hang loose from a yoke, which is striped with insertion. The daintiest of all is a sacque of fine white lawn, striped all over, sleeves and all, with lace insertion, and finished with a jabot in front. The sleeves are full and straight in a sort of cape fashion, which is especially pretty for warm weather.

It is prophesied that black taffeta will be very popular for spring gowns, with elaborate trimmings of lace and velvet ribbon. Pretty skirts of black

taffeta, to wear with fancy waists, are seen now, and the decorations are often narrow ruffles of the same set on to form a round pointed overskirt, arranged around the skirt in festoons or up and down the front seams, spreading out separately toward the bottom, where they extend all around.

It is plain to be seen that what is popular style with cashmere and empress cloth suits will become a rage when cotton dresses are worn.

DOMESTIC ECONOMY.

Domestic Hints.

TRIPE FRITTERS.—Boil fresh tripe till tender, or use nice slices of pickled tripe. Prepare a batter of one egg, one cupful of milk, a teaspoonful of baking powder, a pinch of salt, and flour to make stiff as batter cakes. Salt and pepper the tripe, dip the slices in the batter, and fry in hot lard. Finer than fish for a winter breakfast.

NOUGAT.—Put one pound of granulated sugar into an iron skillet and stir constantly until melted and an amber color. Have ready one and a half cups of shelled almonds, or any nuts desired, which have been warmed in a slow oven. When the sugar is all melted and an amber color, add the nuts, stir until mixed and pour without delay into a greased pan.

DOLLY VARDEN CAKE.—The whites of three eggs with one teaspoonful powdered sugar and half a teaspoonful of butter; two teaspoonfuls flour with one and a half teaspoonfuls baking powder. Cream the butter and sugar, add the eggs, mix in the flour with half a teaspoonful of milk, and flavor with lemon. Make a frosting of the yolks of the eggs and one teaspoonful of sugar.

ENGLISH PLUM PUDDING.—Three cupfuls of flour, one cupful of bread crumbs, two and one-half cupfuls of beef suet, chopped very fine, four cupfuls of raisins, stoned and chopped, four cupfuls of currants, picked, washed and dried, two cupfuls of sugar, two ounces of citron, chopped fine, the juice of one lemon and four beaten eggs. Dredge a pudding cloth with flour, put in the pudding, tie loosely, plunge in boiling water and boil for eight hours.

WASHINGTON OYSTERS (IN CHAFING DISH).—Put fifty fine large oysters, with their liquor, in a large dish. Season them well with salt and pepper. Chop a nice tender head of celery very fine; add it to the oysters; next add a blade of mace. Cover the top of the oysters with little flecks of butter, then pour in half a pint of sherry. Put the cover of the chafing dish on, light the alcohol lamp under the chafing dish and let the mixture cook till the edges of the oysters curl; then extinguish the flame and serve the oysters in soup plates.

RICE AND FRUIT PUDDING.—Wash a small quantity of rice and put in a pie dish in the oven with a little water. When the water has evaporated, add to the rice a small quantity of milk, stir it and put it again in the oven, stirring it now and again until it is soft and add more milk if required. A little sweet cream stirred in will be found an improvement. Fill a pie dish almost full of whatever fruit you prefer, sweeten it well and then lay the rice unevenly over it in handfuls. Put it into the oven, bake until the rice is brown and serve.

STEWED KIDNEY.—This receipt is from a correspondent to *Harper's*: Soak two nice beef kidneys in cold water one hour, then with a very sharp knife cut them in small pieces, taking care to reject all fat and gristle. While

cutting the kidneys throw each bit as cut into cold water. Wash them well, and put them in a saucepan with a pint of cold water to each kidney. Slice a small onion, add also two bay leaves, two or three sprigs of parsley, and celery stalks if you have them. If not, add instead a teaspoonful of celery seed and two or three cloves. Skim when it boils up; then cover and boil slowly three hours. Turn into a dish. The next morning make a roux of a tablespoonful of butter and flour, and heat thoroughly. Season with salt, pepper, Worcestershire sauce and lemon juice. Serve very hot with bits of lemon.

Hints to Housekeepers.

The oil left from sardines is an excellent substitute for butter in fishballs.

To prevent a mould in ink infuse a piece of salt the size of a hazelnut in each quart.

In frying croquettes, roll in bread crumbs; but in baked croquettes, roll the last time in well-buttered crumbs.

All beans and leguminous vegetables should be cooked with the cover half off the stewpan in order to be digestible.

When the taste of the cook has become vitiated by the tasting of many dishes a swallow of milk will restore the delicacy to the palate, so says an old authority on cuisine.

A good way to clean silk consists in sponging it with equal parts of black tea and vinegar. Shake the silk until it is nearly dry, whereupon press it with an iron that is half hot.

A very good way to test whether sheets are damp or not is to place an ordinary tumbler between the sheets for a little while, and if the bed is damp traces of moisture will appear on the inside of the glass.

Women who travel much not infrequently find their skirts spotted with train oil, and bicyclists suffer similarly from a too generous lubricating of their wheels. Cold water and soap will be found much more effectual in removing traces of this sort of accident than the more usual application of hot water, as that is quite likely to "set" the grease.

Spots or marks on woolen gowns are easily removed by rubbing them well with a cake of magnesia. Hang the gown away for a day or two, and then brush thoroughly. If the spot has not entirely disappeared, repeat the process. Other gowns besides those of wool can often be cleaned by this means, and laces that are slightly soiled are freshened by rubbing them well with magnesia and allowing it to remain on the lace for a short time.

If the fat begins to foam in cooking croquettes, fishballs or doughnuts it is a sign that the temperature is too low. Stop the frying for a few moments and pull the kettle to the front of the range until the proper temperature is reached. When the fat begins to smoke drop in a bit of bread. If it browns while you count sixty with the ticking of the clock it is hot enough for doughnuts and potatoes; but for croquettes, oysters and fishballs it should be hot enough to brown the bread while counting forty.

The defacing of the polished wooden edges of the bathtub by brushes, soap and other articles laid upon it can readily be avoided by the use of a convenient receptacle for such things, fitly named a bathtub tray. It is made of perforated white enameled zinc of suitable size, and bound around the edge with a slat of nicely finished hardwood, thus making a framework about two

inches deep. Fastened to the sides of this frame are supporting arms of the same kind of wood, sufficiently long to reach across any bathtub. In this tray can be placed all cleaning materials.

The yolks of eggs dry almost as soon as they come in contact with the air, but if dropped at once into a cup of cold water will keep in good condition in the refrigerator for three or four days.

A piece of ice will keep some time if laid on a piece of muslin which is tied over a bowl tight enough so that the ice cannot touch the sides or bottom. Then tie another cloth over the top. The water from the melting ice is below and does not accelerate the melting, as it would if the ice were standing in it.

Here is a good way to clean carpets without taking them up: Sweep thoroughly first; then put two tablespoonfuls of ammonia in a pail of water, and with a brush, not too stiff, scrub the carpet carefully. Wipe with a cloth; change the water frequently. Open all the windows and doors until the carpet dries. It will not take long.

To keep hair brushes in good condition proceed in the following manner: Have two dishes which contain, say, a quart of water; add a dessert spoonful of ammonia. Now take the brushes, one by one, and keep dipping the bristles up and down in the water (being careful not to wet the backs), and in a minute or two the dirt and dust will come out of them as if by magic. Now dip up and down several times in the second dish containing the clean water to rinse them, shake well, and place to drain across a rack or towel horse. No soap is needed, and no rubbing with the hands.

Doughnuts or fritters are much better fried in dripping than in lard.

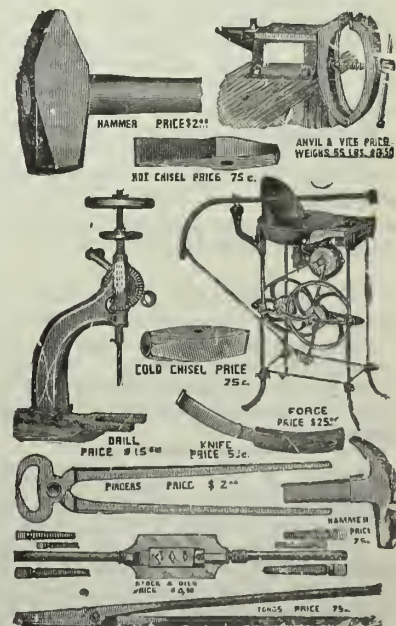
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Government Estimate of 1897 Crops.

The total farm value of the wheat crop of 1897, according to the Department of Agriculture figures, just made public, was \$428,547,000 at the beginning of December, against \$311,000,000 one year ago, \$238,000,000 two years ago, and only \$218,000,000 as an average for the years 1894 and 1893. The crop was the largest ever gathered in the United States, with the exception of 1891, when the aggregate farm value was \$513,000,000. The liberal yield and the higher market have done much to put wheat growers on their feet, with the fair margin of profit in many sections well utilized in paying off mortgages or making needed farm improvements. The Government figures place the aggregate farm value of the 1,900,000,000 bushels of corn at \$500,000,000. Owing to the very low prices this is a much smaller sum than that given for any previous year for a long time, save 1896, when it was much the same. After all, the farm value of corn in its natural state is a matter of secondary consideration to our progressive farmers, who aim to profitably convert it into beef, pork, mutton and dairy products. The following table presents the final Government figures, showing the area, yield and average per acre of the staple crops:

| Acres. | Bushels. | Average. |
|------------------------|---------------|----------|
| Corn.....80,095,000 | 1,908,000,000 | 23.7 |
| Wheat.....39,465,000 | 530,000,000 | 13.4 |
| Oats.....25,730,000 | 699,000,000 | 27.2 |
| Rye.....1,703,000 | 27,000,000 | 15.8 |
| Barley.....2,719,000 | 67,000,000 | 24.6 |
| Potatoes.....2,535,000 | 164,000,000 | 64.6 |
| Hay.....42,427,000 | *61,000,000 | *1.44 |

*Tons.

Coast Industrial Notes.

—Santa Monica, Cal., is to have a \$500,000 beet-sugar factory.

—In 1897 the value of the dry wines made in this State amounted to \$25,500,000; brandy, \$1,000,000; sweet wines, \$5,000,000.

—In '97 the St. Paul & Tacoma Lumber Co., of Tacoma, dressed over 35,000,000 feet of lumber; the Grays Harbor Commercial Co., 29,000,000 feet.

—Los Angeles contains the largest manufactory of bee hives and apiarian supplies west of the Missouri river. California produces more and better honey than any other State in the Union.

—The Tacoma, Wash., machine shops report a scarcity of first-class machinists. Good machinists are paid from \$3.25 to \$3.50 a day. Machinists, ship-builders and other skilled workers are in demand on Puget Sound.

—The Union Beet Sugar Co. of San Francisco has let a contract for a \$500,000 beet sugar plant to be located on the Goldtree tract near Santa Maria, Cal. E. C. Burr of the Alameda Sugar Co. is to be manager.

—Trustees Los Angeles oil companies have under contemplation the construction of a tank steamer for transportation of crude petroleum to San Francisco, piping the oil to San Pedro, or other available coast point.

—The Alaska craze has created an enormous demand for coast vessels, steam and sail, and besides local craft, several are on the way from the Atlantic side. San Francisco and Seattle shipbuilders are busy supplying the demand.

—It is now proposed to build three feeders for the Sierra road to radiate from Jamestown, Cal., to be operated by electricity. The three proposed roads would connect Jamestown with Sonora, Jacksonville and the Stanislaus river.

—In reference to the Klondike business the Canadian Pacific Telegraph Co. has decided to lay an additional cable between Vancouver and Victoria. The company is also stringing another heavy copper wire between Montreal and Vancouver.

—The largest single payment of customs at Port Townsend, Wash., for February, was \$46,000, paid as duties on 14,000 barrels of cement brought by the British ship Wray Castle, to be used on the gun emplacement of the Marrowstone point fortifications.

—The gold of the Yukon is beginning to yield up of its treasures a small share to the public revenue. A remittance from Gold Commissioner Fawcett, at Dawson, has arrived at Ottawa, amounting to \$130,000. Of this, \$50,000 was left by two Scandinavians named Karlson, brothers, who died of typhoid fever last fall. The money is to be forwarded by the authorities to their father in Norway. The \$80,000 is the proceeds of fees. To this may be added another \$85,000, which will make a total revenue from the Yukon of \$165,000 to date.

—Talk of an opposition steamship line between South and Central American ports and San Francisco is revived. The Compania Sud American de Vapores, and the Pacific Steam Navigation Co., are said to be considering the venture, the former company to leave weekly, touching at Coquimbo, Antofagasta, Iquique, Mollendo and Callao, arriving at Panama in ten days. Then the latter to take up the running, touching at the principle Central American and Mexican ports, making the run to San Francisco in twelve days; thus

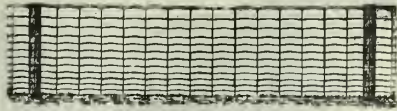
the passage from Valparaiso could be made in a little over three weeks.

—Creamery butter being high priced in California, the market is flooded with "process butter," sold at a profit for 25 cents a pound, at which price there would be a loss on creamery butter. To make this process butter, odds and ends of dairy butter, difficult of sale, are bought up, then melted, the oil sweetened by the addition of some chemicals and churned with milk. This manufactured butter presents a good appearance and tastes well, but it will not keep. As this product, however undesirable it may be, is really butter and not made from animal fats, it does not come under the law relating to oleomargarine.

Macbeth lamp-chimneys
save nine-tenths of the cost
and all the trouble.

Go by the Index.

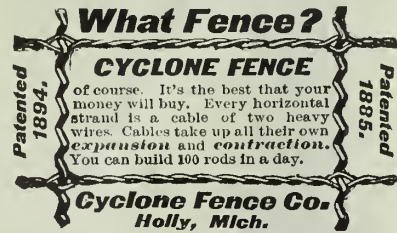
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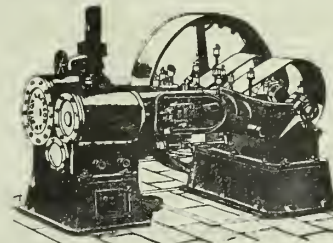
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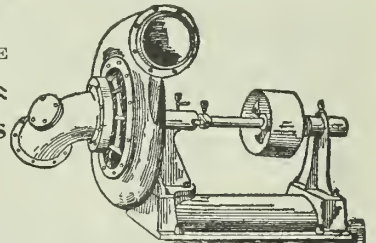
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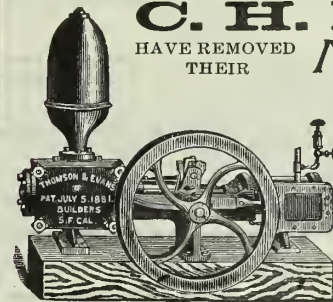
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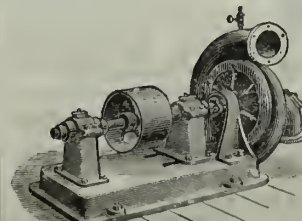
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List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING FEBRUARY 15, 1898.

592,137.—CARRYING APPARATUS—J. Anderson, Walla Walla, Wash.
 599,281.—CAR FENDER—H. W. Bodeman, S. F.
 599,217.—TREE PULLER—E. P. Boden, Santa Clara, Cal.
 599,161.—SASH HOLDER—L. H. Bowman, Walla Walla, Wash.
 599,138.—FISHING REEL—F. J. Boyle, Tacoma, Wash.
 599,226.—BOTTLE STOPPER—J. A. Donahue, Los Angeles, Cal.
 599,171.—ROLLING PIN—A. B. Fowler, Shelton, Wash.
 599,143.—BICYCLE LOCK—J. J. Hall, Los Angeles, Cal.
 599,988.—EXCAVATOR—F. H. Heath, Tacoma, Wash.
 599,040.—THRUST BEARING—F. H. Heath, Tacoma, Wash.
 598,937.—TROLLEY—C. H. Johnson, Elmhurst, Cal.
 599,243.—TABLE—G. J. Kilgler, Santa Cruz, Cal.
 599,251.—SASH HINGE—H. M. Pitman, S. F.
 599,259.—SPRING GEAR—S. Q. Saunders, New Bridge, Ogn.
 28,281.—DESIGN—SPOON HANDLE—H. J. Klumpp, Portland, Ogn.
 28,300.—DESIGN—HARP GUITAR FRAME—C. Knutsen, Port Townsend, Wash.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

AUTOMATIC PRESSURE EQUALIZING BEER FAUCET.—F. W. Shields, L. A. Spinelli and C. R. Martin of San Jose, Cal. No. 598,579. Dated Feb. 8, 1898. This invention relates to an improved device for drawing beer. It consists of a means for automatically reducing and equalizing the pressure from the cask to the receptacle so that beer or other effervescent liquid can be drawn at all times under a regulated pressure, thus avoiding the great mass of foam or froth which is caused by the escape of gas from the liquid when drawn in the ordinary manner. The device is so constructed as to regulate the pressure by an automatic mechanism and to retain the gas pressure within the cask or receptacle until all the liquid has been drawn therefrom. It consists essentially of a casing having a draw-off at one end, a hollow stem at the opposite end adapted to fit directly into the cask or receptacle and an intermediate chamber into which the liquid is received, a pressure regulator between the inner end of the stem and the adjacent end of the receiving chamber, this regulator consisting of a central body with exterior passages, said body having a chamber at one end in communication with the receiving chamber, a valve stem movable in said body having at one end a valve to close the passage through the hollow stem and a piston fixed to its opposite end of larger area than that of the valve, so that whenever the pressure within the receiving chamber increases beyond the desired point, it will act upon the piston and close the valve at the opposite end to prevent any further escape from the cask to the receiver. Whenever the faucet is opened to draw any liquid, the pressure in the receiver is reduced, the pressure on the valve overcomes that on the piston, allowing it to open for the further passage of liquid into the receiver. The faucet is peculiarly constructed, having a tapering body fitting a corresponding shell in such a manner that the faucet is opened by moving the body into the larger diameter of its shell or chamber and allowing the liquid to flow around it and pass out in a thin sheet.

TREE OR VINE PULLERS.—Edmund P. Boden, Santa Clara, Cal. No. 599,217. Dated February 15, 1898. This invention relates to an apparatus which is especially designed to pull small trees, vines and bushes from the ground. It consists essentially of a four-wheeled vehicle, the front and rear wheels of which are situated at a considerable distance apart, an inclined truss framework extending between the two sets of wheels having a track or runway from one end to the other, a truck adapted to travel upon the track having a chain or means to connect it with the tree or vine to be pulled when the truck is at the lower end of the runway. When the wagon is drawn ahead, the truck runs up the inclined plane of the framework and thus acts to pull the tree.

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S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, March 2, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|---------------------|-----------------|
| Wednesday..... | \$1 05 @ 1 06 1/4 | \$ 91 @ 92 3/4 |
| Thursday..... | 1 05 1/4 @ 1 03 1/4 | 91 @ 89 3/4 |
| Friday..... | 1 04 @ 1 03 | 90 3/4 @ 88 1/4 |
| Saturday..... | 1 03 @ 1 01 1/4 | 89 1/4 @ 88 1/4 |
| Monday..... | 1 02 3/4 @ 1 05 | 89 @ 90 3/4 |
| Tuesday..... | 1 04 1/4 @ 1 05 1/4 | 89 3/4 @ 91 1/4 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|------------|------------|
| Wednesday..... | 7s 6 1/2 d | 7s 3 3/4 d |
| Thursday..... | 7s 6 1/2 d | 7s 3 d |
| Friday..... | 7s 5 1/2 d | 7s 2 3/4 d |
| Saturday..... | 7s 4 1/2 d | 7s 1 3/4 d |
| Monday..... | 7s 5 1/2 d | 7s 2 d |
| Tuesday..... | 7s 4 1/2 d | 7s 1 3/4 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|---------------------|---------------------|
| Thursday..... | \$1 39 1/4 @ 1 41 | \$1 29 @ 1 30 3/4 |
| Friday..... | 1 40 1/4 @ 1 39 1/4 | 1 31 @ 1 29 1/4 |
| Saturday..... | 1 39 1/4 @ 1 39 1/4 | 1 29 1/4 @ 1 29 |
| Monday..... | 1 40 @ 1 40 1/4 | 1 30 @ 1 31 |
| Tuesday..... | 1 40 1/4 @ 1 41 | 1 30 3/4 @ 1 31 1/4 |
| Wednesday..... | 1 40 1/4 @ 1 40 1/4 | 1 30 3/4 @ 1 30 3/4 |

Wheat.

The wheat market is lower than a week ago, the quotable decline in spot values being 25¢@50¢ per ton. With nearly all conditions of the past week bearish in their influence, the market was not in such bad shape as there was reason to expect. Rainy weather, the assessor in sight, lower speculative values and weakness abroad combined to make the situation for the time being unsatisfactory for sellers. The Leiter deal in Chicago is claimed to be still in operation, but the predictions made in regard thereto and the actual developments are so far apart that many are coming to the conclusion that it is simply another case of the public being faked. That wheat holds up here so well shows that, locally, holders are in a strong position. The rain of the past week has improved crop prospects, but there is still a large portion of the State—central and southern—where the present situation is not wholly assuring, and weather will have to be generally favorable for next ninety days to produce a good crop.

As regards the outward movement of wheat, the month just closed made a better record than was indicated by the tardy movement in the early part of the month. During February eleven wheat cargoes were cleared from this port, the month's shipments aggregating 692,569 centals, with a valuation of \$1,025,092. Of the above quantity, over one-half was cleared in the last ten days of the month. As there were not to exceed 250,000 tons of surplus wheat in the State on Jan. 1st, according to the official figures published at the close of 1897, present stocks available for export, making due allowance for wheat and flour received from Oregon, Washington and other outside sections, should be less than 150,000 tons. As there will be no new wheat worth mentioning for the next four months, shipments at the same slow rate as during the past four weeks will absorb the entire surplus by the first of July. Stocks of what is termed "invisible," or which failed to be reported, may swell the figures of the surplus, as above given, 10 or 15 per cent. Admitting this and more, with anything like a moderate export movement during the next four months, the granaries of the State will be practically empty by the time the 1898 wheat begins to be turned in.

The annual scare in regard to State taxes has been experienced this week. As is invariably the case, shippers made effort to avoid paying taxes on any great quantity of wheat, and cut down their bids, as a rule, more than the taxes amounted to. The way the taxing of grain is at present conducted, injustice is done many small dealers, who are compelled to pay the tax in question, no matter whether they carry the wheat over the first Monday in March or sell in February. If they do the latter, the buyer knocks the tax off the price. Payment of taxes on some lots is evaded by having the grain moved by rail from one point to another on the day the tax attaches. That the tax can be evaded in this brand contracted for ahead. A vessel in the and other ways shows that there is something radically wrong in the system.

| | |
|-------------------------------------|-----------------------|
| California Milling..... | \$1 42 1/4 @ 1 47 1/4 |
| Cal. No. 1 shipping, alongside..... | 1 40 @ 1 42 1/4 |
| Oregon Valley..... | 1 37 1/4 @ 1 40 |
| Walla Walla Blue Stem..... | 1 40 @ 1 45 |
| Walla Walla Club..... | 1 35 @ 1 40 |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 white wheat per cental for the week were as follows for the options named:

May, 1898, delivery, \$1.39 1/4 @ 1.41.

December, 1898, delivery, \$1.29 @ 1.31 1/4.

Wednesday, at regular noon session of Call Board, May wheat sold at \$1.40 1/4 @ 1.40 1/2; December, 1898, \$1.30 3/4 @ 1.30 3/4.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|---------------------|---------------------|
| Liv. quotations..... | 6s 6 1/4 d @ 6s 7 d | 8s 1 d @ 8s 1 1/4 d |
| Freight rates..... | 15 @ 16 1/4 s | 27 1/4 @ 30 s |
| Local market..... | \$1.35 @ 1.40 | \$1.40 @ 1.42 1/4 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on February 1st and March 1st:

| Tons— | Feb. 1st. | Mar. 1st. |
|-------------|-----------|-----------|
| Wheat..... | 82,674 | *68,230 |
| Barley..... | 29,657 | †23,184 |
| Oats..... | 2,435 | 3,054 |
| Corn..... | 662 | 718 |

* Including 34,044 tons at Port Costa, and 31,300 tons at Stockton.

† Including 13,277 tons at Port Costa, 4805 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 14,454 tons for month of February. A year ago there were 43,590 tons wheat in Call Board warehouses.

Flour.

There is no improvement to record, either in tone or in quotable values, and none anticipated in the near future. Buyers on local account are not operating beyond most immediate needs. Shipments outward are of fair proportions, but are almost wholly of special wheat fleet, clearing this week for England, took 5000 barrels flour as part cargo.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | 83 00 @ 83 25 |
| Superfine, good to choice..... | 3 35 @ 3 60 |
| Country grades, extras..... | 4 00 @ 4 25 |
| Choice and extra choice..... | 4 25 @ 4 50 |
| Fancy brands, jobbing..... | 4 50 @ 4 65 |
| Oregon, Bakers' extra..... | 3 90 @ 4 25 |
| Walla Walla, Bakers' extra..... | 3 90 @ 4 25 |

Barley.

Market is less favorable to sellers than it was at date of last review, although weakness is not so pronounced as it has been part of the time intervening, when the weather was either rainy or threatening. The barley market more than any other is sensitive to weather influences, prices hobbling up and down with the barometer, and often with a total disregard of actual conditions which do not warrant the fluctuations. As for example, when it is raining in the northern part of the State, and is dry south where most of the barley is grown, the price will frequently drop just as though the rain was falling heavily in the southern half of the State and nowhere else. Whatever the coming crop may prove, present stocks are light and there can be no new barley on the market for over three months to come. Barley is still going outward in considerable quantity. One or two sailing vessels now on the list to load grain for Europe have granted charterers the privilege of making barley the whole or part cargo. A shipment of 7500 centals went forward to Australia per last steamer. A grain ship clearing for England yesterday (Tuesday) took 41,686 centals, valued at \$48,000.

| | |
|---------------------------------|---------------------|
| Feed, No. 1 to choice..... | 1 02 1/4 @ 1 07 1/4 |
| Feed, fair to good..... | 1 00 @ 1 02 1/4 |
| Brewing, No. 1 to choice..... | 1 10 @ 1 17 1/4 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

May, 1898, delivery, 95¢ @ \$1.02 1/2.

December, 1898, delivery, 85¢ @ 89¢.

Wednesday at regular noon session of the Call Board May, 1898, feed sold at \$1.00 1/2 @ 1.01 1/2; Dec., 1898, 89¢.

Oats.

For Feed and Milling descriptions the market is easier than for some weeks preceding, partly due to a considerable increase lately in spot supplies, and also in a measure attributable to lack of firmness in markets for most other cereals. Holders were more anxious to unload and buyers less desirous of operating than at any previous date of the past month. Colored oats of select quality and desirable for seed were in fair request, market for the same being moderately firm at previous range of values.

| | |
|-------------------------------|-----------------|
| White Oats, fancy feed..... | 1 22 1/2 @ 1 25 |
| White, good to choice..... | 1 15 @ 1 20 |
| White, poor to fair..... | 1 07 1/2 @ 1 10 |
| Gray, common to choice..... | 1 12 1/2 @ 1 20 |
| Milling..... | 1 17 1/2 @ 1 20 |
| Surprise, good to choice..... | 1 20 @ 1 27 1/2 |
| Black Russian..... | 1 20 @ 1 40 |
| Red..... | 1 05 @ 1 40 |

Corn.

Market has declined about 50¢ per ton since last issue, the more favorable crop weather in the meantime and fairly liberal importations

from the East combining to make the situation unfavorable to sellers. Local dealers are operating at present mainly in the imported article. Not until importations cease is the market for the home product likely to show notable appreciation. Eastern markets lately have been decidedly low.

| | |
|----------------------------------|-----------------|
| Large White, good to choice..... | 1 05 @ 1 07 1/4 |
| Large Yellow..... | 1 05 @ 1 07 1/4 |
| Small Yellow..... | 1 10 @ 1 12 1/4 |
| Eastern Yellow..... | 1 02 1/4 @ 1 05 |
| Egyptian White..... | — @ — |
| Popcorn, shelled, 1 lb..... | — @ — |

Rye.

Values remain about as last quoted. Receipts are of light volume and offerings meet with tolerably prompt custom at the prevailing rates.

Good to choice, new.....1 05 @ 1 07 1/4

Buckwheat.

Spot supplies are of slim proportions and are not likely to show material increase during the balance of the current season. Owing to the absence of offerings values are necessarily poorly defined.

Good to choice.....1 75 @ 2 00

Silverskin.....— @ —

Beans.

Inquiry for beans has been hardly so active as for a fortnight or more past, which was in a measure due to the inability of buyers to operate at prices to their suiting. Market for most varieties of White Beans showed a firm tone, with the bulk of spot supplies in strong hands and most holders unwilling to let go at current figures. Limas tended less in favor of sellers than last quoted, owing to prospects for next crop being better than they were a week ago. In Colored Beans there was no evidence of any business of consequence doing, but to have purchased freely the payment of full current figures would have been necessary.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 50 @ 1 60 |
| Small White, good to choice..... | 1 50 @ 1 65 |
| Lady Washington..... | 1 45 @ 1 55 |
| Butter, small..... | 1 45 @ 1 55 |
| Butter, large..... | 1 60 @ 1 75 |
| Pinks..... | 2 60 @ 2 75 |
| Bayos, good to choice..... | 2 90 @ 3 00 |
| Reds..... | 2 00 @ 2 25 |
| Red Kidneys..... | 2 00 @ 2 25 |
| Limas, good to choice..... | 2 00 @ 2 25 |
| Black-eye Beans..... | 2 25 @ 2 50 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

Late advices from New York by mail give the following review of the bean market in that center, prices quoted being per bushel of 60 lbs:

An active export demand for Marrow beans has been enjoyed again this week, and the market is gradually responding to this large movement. About the first of the year there was a heavy accumulation of stocks here, but under the constant call from shippers the holdings have been largely reduced and the position looks healthier than for some time past. A good deal of this week's business was done at \$1.35 f. o. b., but later sales were at \$1.37 1/2, and to-day \$1.40 was obtained often enough to establish the quotation. Medium have worked out rather slowly but prices for choice stock have ruled steady. Pea have had a moderate jobbing trade and the feeling has been quite firm; general sales at \$1.12 1/2, but a little business has been effected at \$1.15. Export orders for Red Kidney were rather light early in the day and these were filled at \$1.65 @ 1.67 1/2; more interest was shown on Friday and the feeling is now a little firmer for choice stock. Demand for White Kidney has been light and receivers accepted \$1.50 whenever there was opportunity to sell. Turtle Soup in very small supply and firm. Yellow Eye continue dull. Quite a speculative demand for California Lima has developed and prices are 5¢ higher and firm; early sales were at \$1.35, then a car or two brought \$1.37 1/2, and within a day or two \$1.40 has been obtained for a number of lots. Advices from the Pacific coast are very strong. Green peas steady.

Dried Peas.

There is no change to record in the situation. Millers are fairly stocked with Green Peas imported from the East, and are not bidding up to any noteworthy extent on offerings of home product. Niles Peas are ruling fairly steady, with no heavy offerings of the same, either from first or second hands.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 80 @ 2 00 |
| Niles Peas..... | 1 40 @ 1 50 |

Hops.

Market is termed firm, but at the same time there is little inquiry observable for round lots or offerings from growers. Demand locally is not brisk, but in the absence of selling pressure purchases are difficult to effect at less than full current figures. There was a fair outward movement by sea the current week, over 48,000 pounds going forward by steamer to Australia.

Good to choice, 1897 crop.....12 @ 16

The following review of the hop market, coming forward by mail of late date, is from a New York authority:

The volume of business on the local market is still quite small, and the strength of the position at present is the light holdings the world over, and a pretty general feeling that England will require more of our hops as the season advances. Just now shippers are confining their operations largely to the forwarding of stock that is arriving on through bills of lading. London cable advices are very firm but report rather a quiet trade, with brewers giving most attention to medium qualities and yearlings. Our home brewers are not large buyers, at present. Their purchases during December and the first half of January were quite heavy, and they are now fairly well stocked. At the same time they are not indifferent to the situation, and would not let a favorable opportunity pass to secure further lots. Prices throughout may be called steady, possibly firm on high qualities. Stocks of hops back in the interior of the State are very light, and the holdings on the Pacific coast have been considerably depleted of late.

Wool.

Dullness is still the prominent feature of the local wool market, as has been the case since the turn of the year. The spring clip will soon begin to put in an appearance, and

indications now are there will be little trading until the spring season opens. Markets in Eastern centers are reported as being very quiet at present. There are probably six million pounds or more of last year's wool still on hand here, but it is being steadily held, holders having confidence in the future.

SPRING.

Oregon Eastern, choice.....13 @ 15

Oregon Eastern, fair to good.....10 @ 12

FALL.

Middle County, free.....10 @ 13

Northern, free.....11 @ 14

Southern Mountain.....9 @ 12

San Joaquin defective.....7 @ 8 1/4

Hay and Straw.

There is an easier tone to the hay market than a week ago, caused by the showery and favorable crop weather experienced in the meantime. Quotable values have not shown decline, however, nor are any serious breaks in prices likely to occur until new hay begins to come forward. Present stocks, both in the interior and here, are too light to be of material aid to the huying interest in bearing down prices.

| | |
|----------------------|---------------|
| Wheat..... | 16 00 @ 19 00 |
| Wheat and Oat..... | 15 00 @ 18 00 |
| Oat..... | 15 00 @ 17 00 |
| Barley..... | 13 00 @ 16 00 |
| Clover..... | 11 00 @ 13 00 |
| Stock Hay..... | 10 00 @ 12 00 |
| Alfalfa..... | 10 00 @ 11 50 |
| Compressed..... | 15 00 @ 18 50 |
| Straw, 1/2 bale..... | 40 @ 50 |

Millstuffs.

Bran and middlings are in increased supply and are offering at further reductions from the declines last quoted. Tendency on Rolled Barley and Milled Corn was to easier figures, more especially was this the case on last named product.

| | |
|---------------------|---------------|
| Bran, 1/2 ton..... | 16 50 @ 17 50 |
| Middlings..... | 18 00 @ 22 00 |
| Barley, Rolled..... | 22 50 @ 23 00 |
| Cornmeal..... | 23 00 @ 23 50 |
| Cracked Corn..... | 23 50 @ 24 00 |

Seeds.

There is scarcely any Mustard Seed now in stock and no business to record. Quotations remain nominally as before. Flaxseed market is firm, with little offering. Birdseed is commanding steady figures, but trade is of a light order. Alfalfa Seed is receiving a little more attention than at any previous date this season, but is not quotably higher.

| | |
|----------------------------|-------------|
| Mustard, Yellow..... | 2 75 @ 3 00 |
| Mustard, Trieste Seed..... | 2 75 @ 3 00 |
| Mustard, Wild Brown..... | 2 00 @ 2 25 |
| Flax..... | 2 20 @ 2 25 |

| | |
|--------------------|---------------|
| Canary..... | 2 1/4 @ 2 3/4 |
| Rape..... | 2 1/4 @ 2 3/4 |
| Hemp..... | 2 3/4 @ 3 1/4 |
| Alfalfa, Utah..... | 5 1/4 @ 6 1/4 |

Bags and Bagging.

The Grain Bag market is giving evidence of some life, now that fears of a dry season are partly dispelled. While there is a healthier tone, there are no advances to record in quotable values. There is reason to believe that the supply of bags will prove ample for the season's needs. Wool Sacks have continued quiet, but a fairly active demand is anticipated at an early day.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, buyer July..... | — @ — |
| Calcutta Grain bags, 22x36, spot..... | 5 1/4 @ 5 3/4 |
| State Prison bags, per 100..... | 5 30 @ — |
| Wool sacks, 4 lb..... | 30 @ — |
| Wool sacks, 3 1/2 lb..... | 27 @ — |
| Gunnies..... | 10 @ — |
| Bean bags..... | 4 1/4 @ 4 3/4 |
| Fruit sacks, cotton..... | 5 1/4 @ 6 1/4 |

Hides, Pelts and Tallow.

Values for Hides are about as last quoted, with the market healthy in tone. Pelts are meeting, as a rule, with prompt sale at full current figures. Tallow market is steady, with no excess of offerings.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|-------------|
| Heavy Steers, over 56 lbs..... | 10 1/2 @ — | 9 1/4 @ — |
| Medium Steers, 48 to 56 lbs..... | 9 1/2 @ — | 8 1/4 @ — |
| Light Steers, under 48 lbs..... | 9 @ — | 8 @ — |
| Heavy Cow Hides, over 50 lbs..... | 9 @ — | 8 @ — |
| Light Cow Hides, under 50 lbs..... | 9 @ — | 8 @ — |
| Wet Salted Veal..... | — @ 10 | — @ 9 |
| Wet Salted Veal..... | — @ 10 | — @ 9 |
| Wet Salted Veal..... | — @ 11 | — @ 10 |
| Dry Hides..... | 17 @ 17 1/2 | 13 1/2 @ 14 |
| Dry Kip and Veal, 11 to 16 lbs..... | 14 @ 15 | — @ 11 |
| Dry Calf, under 4 lbs..... | 18 @ 20 | 16 @ 17 |
| Horse Hides, large..... | 2 25 @ 2 75 | 2 00 @ 2 25 |
| Horse Hides, medium..... | 2 25 @ 2 50 | 2 00 @ 2 25 |
| Horse Hides, small..... | 2 25 @ 2 50 | 2 00 @ 2 25 |
| Colts' Hides..... | 2 25 @ 2 50 | 2 00 @ 2 25 |
| Pelts, long wool, per skin..... | 90 @ 1 20 | 70 @ 90 |
| Pelts, short wool, per skin..... | 40 @ 70 | 20 @ 30 |
| Pelts, shearling, per skin..... | 20 @ 30 | 25 @ 30 |
| Deer Skins, best summer..... | — @ 20 | — @ 10 |
| Deer Skins, good medium..... | — @ 10 | — @ 12 |
| Deer Skins, thin winter..... | — @ 10 | — @ 12 |
| Elk Hides..... | — @ 3 | — @ 3 1/4 |
| Tallow, good quality..... | 2 @ 2 1/4 | 2 @ 2 1/4 |
| Tallow, No. 2..... | 2 @ 2 1/4 | 2 @ 2 1/4 |
| Goat Skins, perfect..... | — @ 30 | — @ 37 1/2 |
| Goat Skins, damaged..... | — @ 10 | — @ 20 |
| Kid Skins..... | — @ 5 | — @ 10 |

Honey.

Market is lightly stocked with desirable qualities of extracted, especially with Water White, and market for latter is firm at the quotations. Choice to select combs is in fair supply, considering that the demand for the same is wholly local. Dark grades of either comb or extracted move slowly and market for them is devoid of firmness.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 4 1/4 @ 5 |
| Extracted, Light Amber..... | 3 1/4 @ 4 |
| Dark Tule..... | 1 1/4 @ 2 1/4 |
| White Comb, 1-lb frames..... | 8 @ 9 1/4 |
| Amber Comb..... | 4 @ 6 |

Beeswax.

More than is offering could be readily disposed of. In some instances an advance or

quotable rates is being realized, especially in the filling of small orders.

Fair to choice, per lb. 24 @ 27

Live Stock and Meats.

Beef market was firm for best qualities, some very choice commanding a moderate advance on previous figures, with prospects of higher prices at an early day. For Mutton the market was strong and another advance recorded. Hogs were in fair receipt as compared with the demand; especially were undesirable ones for packers in liberal supply, as compared with demand, and market ruled easier.

Beef, 1st quality, dressed, net per lb. 6 1/4 @ —
Beef, 2d quality, 5 1/4 @ 6
Beef, 3d quality, 4 @ 5
Mutton—ewes, 7 1/2 @ 8; wethers, 8 @ 8 1/2
Hogs, hard grain fed, medium, 4 1/4 @ 4 1/2
Hogs, small, 4 @ 4 1/2
Hogs, large hard, 4 1/4 @ 4 1/2
Hogs, soft and feeders, 3 1/4 @ 3 1/2
Hogs, country dressed, 4 1/4 @ 5
Veal, small, per lb. 6 @ 7 1/2
Veal, large, per lb. 6 1/4 @ 7
Lamb, Yearling, per lb. 8 @ 8 1/2
Lamb, Spring, per lb. 12 1/4 @ 15

Poultry.

Turkeys were in lighter receipt than preceding week, and values were less depressed. At the same time the market failed to develop noteworthy firmness. Old Chickens, Ducks and Geese sold to little if any better advantage than previous week. Receipts of home product were not large, but three cars of Eastern arrived. Choice young Chickens were scarce and high, as were also fine young Ducks and fat Goslings. Pigeon market was moderately firm for young, but slow and weak for old.

Turkeys, dressed, per lb. 12 @ 15
Turkeys, live hens, per lb. 12 @ 12 1/2
Turkeys, live gobblers, 10 @ 11
Hens, Cal., per doz. 4 00 @ 5 00
Roosters, old, 4 00 @ 4 25
Roosters, young, (full-grown), 6 50 @ 7 00
Fryers, 6 00 @ 6 50
Broilers, large, 5 50 @ 6 00
Broilers, small, 4 00 @ 4 50
Ducks, young, per doz. 6 50 @ 7 50
Ducks, old, 4 00 @ 4 50
Geese, per pair, 1 25 @ 1 50
Goslings, per pair, 2 50 @ 3 00
Pigeons, Old, per doz. 1 00 @ —
Pigeons Young, 1 50 @ 1 75

Butter.

Additional weakness has been developed in this market since last review, with values at the close more favorable to buyers than at any previous date this year. The production is larger than can be absorbed by immediate local requirements, as is invariably the case at this time of year. Prices must consequently drop to levels where shippers will purchase freely or where packers will take hold. As before stated, however, there is no likelihood of values going so low as in some former years.

Creamery extras, per lb. 21 @ 22
Creamery firsts, 20 @ 21
Creamery seconds, 19 @ 20
Dairy select, 19 @ 20
Dairy seconds, 18 @ 19
Dairy, soft and weedy, 16 @ 18
Mixed store, 14 @ 16
Creamery in tubs, 18 @ 20
Pickled roll, 18 @ 20
Dairy in tubs, 18 @ 20
Firkin, Cal., choice to select, 18 @ 20
Firkin, common to fair, 15 @ 17

Cheese.

There is considerable doing in this product, largely the result of the rather low figures prevailing. Values are without quotable improvement, and are not likely to show any special change for the better during the next month or two. Supplies are not heavy, but there is more than enough coming forward for present needs, and sellers generally are anxious to realize.

California fancy flat, new, 9 1/4 @ 10
California, good to choice, 8 1/4 @ 9
California, fair to good, 7 1/4 @ 8
California Cheddar, 9 1/4 @ 10 1/2
California, "Young Americans", 9 @ 11

Eggs.

Market is easier in tone than at date of last review, although quotable values remain close to the figures then noted. While larger quantities of eggs are now being consumed, receipts are heavy, and some have already been placed in line and cold storage for lack of immediate custom. There are no poor eggs arriving, and there is consequently a very narrow range to values.

California, select, large white and fresh, 12 @ 12 1/2
California, select, irregular color & size, 11 @ 11 1/2
California, good to choice store, 10 1/4 @ 11
California, common to fair store, @ —
Oregon, prime, @ —
Held Eastern, as to section and grading, @ —
Local Cold storage eggs, @ —

Vegetables.

Early spring vegetables are not making much of a display as to variety, but several kinds are showing increased receipt and improved quality, notably Peas and Asparagus. Market for both of the above is ruling easier, although desirable qualities are still bringing good prices. Onions of last season continue to be held at tolerably stiff figures, but are not meeting with active demand at the prices asked.

Asparagus, per lb. 15 @ 25
Beans, String, per lb. 8 @ 12 1/2
Beans, Lima, per lb. @ —
Beans, Refugee, per lb. @ —
Beans, Wax, per lb. @ —
Cabbage, choice garden, per 100, 70 @ 80
Cauliflower, per doz. 60 @ 70
Corn, Green, per sack, @ —
Corn, Alameda, per crate, @ —
Cucumbers, hot house, per doz. 50 @ 100
Egg Plant, per lb. 15 @ 20
Garlic, per lb. 2 @ 3 1/2
Mushrooms, Buttons, per lb. 12 1/2 @ 15
Mushrooms, Wild, per lb. 6 @ 10
Okra, Dried, per lb. 12 1/2 @ 15
Onions, Yellow, good to choice, 2 50 @ 2 75
Onions, Yellow, cut, 1 75 @ 2 25

Peas, Sweet, Garden, per lb. 5 @ 7
Peas, Los Angeles, per lb. 4 @ 6
Peppers, Green Chile, per lb. 25 @ —
Rhubarb, per box @ —
Squash, Summer, per lb. @ —
Tomatoes, per box or crate 75 @ 1 50

Potatoes.

There has been a glut of ordinary qualities of Burbank Seedlings, mainly from Oregon, large consignments coming forward both by steamer and rail. Market for other than strictly choice was very weak. Some of the largest lots of Oregon Burbanks were offered as a whole at 60c per cental for good, bad and indifferent. Fancy Salinas or equally desirable were not obtainable at any material decline. Seed potatoes ruled steady. Sweet potatoes were not offered freely, neither did they meet with much inquiry.

Early Rose, River, per cental, 55 @ 70
Peerless, River, @ —
Reds River, 50 @ 60
Garner Chile, Mission, @ —
Burbanks, Salinas, 75 @ 1 15
Burbanks, River, per sack, 55 @ 70
Burbanks, Petaluma and Tomales, per ctn 50 @ 60
Burbanks, Humboldt, per ctn 50 @ 65
Burbanks, Oregon, per cental, 55 @ 75
Garner Chile, Oregon, @ —
Sweet River, per cental, @ —
Sweet Merced, 75 @ 90

The Fruit Market.

Fresh Fruits.

In the line of deciduous fruits, there are still fairly liberal supplies of Apples, but there is no other variety offering. Seldom have Apples been offered so freely at corresponding date. This is the more surprising when it is considered that an active shipping demand was experienced for Apples early in the season. But only choice to select were sought after for shipment in the fall and early winter, which fact has doubtless had considerable to do with the recent very limited offerings of high-grade fruit and the comparatively large stocks of common to medium qualities. Of strictly fancy Apples, large, sound, and in every way faultless, there are virtually none on the market, at least not enough to warrant quoting in a regular way. Such would doubtless command an advance on extreme figure below noted. Fancy Spitzenberg could certainly be relied on to bring \$1.50 per box. For strictly select Virginia Greening or equally desirable stock a still higher figure might be realized. Common to fair were offered freely within range of 30 @ 50c per box. The quality had to be far above the average to command \$1 per box or upward.

Apples, fancy, 4-tier, per box, 1 25 @ —
Apples, choice, 4-tier, per box, 75 @ 1 00
Apples, fair to good, 50-lb box, 50 @ 75
Apples, common to fair, per box, 30 @ 50

Dried Fruits.

The market for cured and evaporated fruits has not changed materially in tone or general conditions since last issue of the RURAL PRESS. While there is a moderate business doing, it is mainly out of stocks held by jobbers. Offerings from first hands at present are mostly peaches, unpitted plums and medium-sized prunes, with little inquiry for either. Small prunes—90-100s—have been in fair demand, and stocks of these are now nearly exhausted. Should orders for prunes continue to be filled for the East and foreign countries, middle sizes will have to be used, as there will be nothing else to run on. Apricots are still inclining slightly in favor of buyers, especially for other than choice to fancy, with offerings mostly of ordinary quality. Apples and pitted plums are holding up well, being in light stock and being in favor on account of Klondike trade. Peas are in very limited supply, especially halves of select quality, and market for such cannot be said to favor buyers. To realize promptly on most kinds of fruit, however, inside quotations or near thereto would have to be accepted. If an active inquiry should set in, more or less hardening of values would speedily develop. That the market at present is not wholly lifeless is indicated by the following shipments by sea the current week: To Australia per steamer, 36,000 lbs.; to London via Panama and New York, 10,000 lbs.; and to Ecuador, South America, 18,600 lbs.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, per lb. 5 @ 5 1/2
Apricots, Royal, fancy, 6 1/4 @ —
Apricots, Moorpark, 7 @ 9
Apples, in boxes, 7 @ 7 1/4
Figs, fancy pressed, 8 @ 10
Nectarines, White, 4 1/4 @ 5
Nectarines, Red, 4 1/4 @ 5
Peaches, unpitted, fancy, 4 @ 4 1/2
Peaches, unpitted, choice, 5 @ 6
Peaches, peeled, in boxes, 9 @ 12
Pears, unpitted Bartlett's, halved, fancy, 7 @ —
Pears, halved, unpitted Bartlett's, 4 1/2 @ 6
Pears, quartered, unpitted Bartlett's, 4 @ 5
Pears, peeled and sliced, @ —
Plums, pitted, 4 1/4 @ 5 1/2
Prunes, in sacks, 40-50's, 5 @ 5 1/2
50-60's, 3 1/4 @ 3 1/2
60-70's, 2 1/2 @ 3
70-80's, 2 1/4 @ 2 1/2
80-90's, 2 @ 2 1/4
90-100's, 1 1/2 @ 2

Above figures are on basis of 2 1/2 @ 2 1/2c for 4 sizes. Prunes in boxes, 1/4c higher for 25-lb boxes, 1/4c higher for 50-lb boxes.

4 sizes Santa Clara and equal, 2 1/2 @ —
4 sizes San Joaquin and Northern, 2 1/4 @ —
Prunes, Silver, 5 @ 8

COMMON SUN-DRIED.

Apricots, ordinary, 4 @ 5
Apples, sliced, 3 1/4 @ 4
Apples, quartered, 3 1/4 @ 4
Figs, Black, 2 @ 3 1/4
Figs, White, 3 @ 4
Peaches, unpitted, 3 @ 4
Plums, unpitted, 1 @ 1 1/2

The dried fruit market on the Atlantic side is thus outlined in a New York review of recent date:

Prime evaporated apples have had a steady jobbing demand and with light offerings desirable grades are held firmly; prime wire dried have sold in carload lots at 8 1/4c, though 8 1/2c is generally asked, and wood dried are held at 8 1/2 @ 8 3/4c; choice to fancy sell from 3 1/2 @ 9 1/4c in a jobbing way, with some extra fancy fractionally higher; very little

demand for stock grading below prime. Few State quarters here and quotations somewhat nominal. Several cars of southern quarters have cleaned up at 2 1/2 @ 3 1/4c, latter figure extreme. Southern sliced have a very fair demand in range of 3 @ 4 1/4c, though latter only realized for very attractive stock. Scarcely any southern coarse cut here or wanted. Chops occasionally held at 4c but 3 1/2 @ 3 3/4c covers sales of average best stock. Cores and skins firmer and one or two important sales reported at \$2.80. Raspberries weak and 12c extreme. Cherries firm. Other small fruits steady. California fruit has met a very good demand at full late prices; offerings quite liberal.

Apricots, Cal. Moorpark, 1897, per lb. 8 @ 11
Apricots, Cal. Royal, 1897, per lb. 5 1/4 @ 8
Peaches, Cal., 1897, peeled, per lb. 10 @ 16
Peaches, Cal., 1897, unpitted, per lb. 5 @ 9
Pears, Cal., 1897, per lb. 5 @ 10
Prunes, Cal., 1897, per lb. 3 @ 8

Raisins.

There is little doing in this line and market is weak for all rain-damaged stock, which constitutes the bulk of present offerings. Prices on 2-crown and 3-crown Muscatel, as also on Seedless Muscatel and dried grapes, are being shaded in favor of the buyer. Strictly choice, showing no effects of rain, are, as a rule, held above the reduced quotations recorded herewith. Quotable values on London layers, as also on 4-crown loose Muscatel and on Sultanas, remain as before.

F. O. B. FRESNO DELIVERY.

Imperial Clusters, per box, @ —
Dehesa Clusters, per box, @ —
Fancy Clusters, per box, @ —
Boxes, London layers, 20-lb box, 1 00 @ 1 10
(Usual advance for fractions.)

Loose Muscatel, 4-crown, per lb. 3 1/4 @ 4
Loose Muscatel, 3-crown, 2 1/4 @ 3
Loose Muscatel, 2-crown, 1 1/4 @ 1 1/2
Sultanas, 3 1/4 @ 3 1/2
Seedless Muscatel, 1 1/2 @ 2
Dried Grapes, 1 @ 1 1/4

Citrus Fruits.

Orange market is showing more firmness, with a very fair demand and no excessive supplies of desirable sizes. Most of the oranges offering are small to medium, while the better class of buyers prefer the large sizes. Oranges now arriving are showing, in the main, prime to choice quality. Lemons are moving slowly and sales at full current figures are the exception. Limes remain in light stock and are mostly green.

Oranges—Navel, per box, 1 25 @ 2 75
St. Michaels, 1 50 @ 2 00
Seedlings, 75 @ 1 50
Lemons—Cal. select, per box, 2 00 @ 2 25
Cal., good to choice, 1 25 @ 1 75
Cal., common to good, 1 75 @ 1 25
Limes—Mexican, per box, 5 00 @ 6 00
Cal., small box, 75 @ 1 25

Nuts.

Almonds are in such light supply as to be hardly quotable in a wholesale way. Walnuts have been arriving from the southern part of the State and are offering at rather easy figures. Peanut market is quiet but steady.

California Almonds, papershell, 8 @ 9
California Almonds, soft shell, 6 @ 7
California Almonds, hard shell, 3 1/4 @ 4
Walnuts White, papershell, 5 1/4 @ 6 1/2
Walnuts White, soft shell, 5 1/4 @ 6 1/2
Walnuts White, Cal., standard, 4 1/4 @ 5
Chestnuts, Cal. Italian, 8 @ 9
Peanuts, Cal., fair to prime, 4 @ 4 1/2
Peanuts, Eastern hand-picked, 5 @ 6
Pine Nuts, 7 @ 8

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------|--------------------|----------------------|
| Flour, 4-sks. | 104,462 | 3,359,021 |
| Wheat, cts. | 258,991 | 8,431,801 |
| Barley, cts. | 61,725 | 3,965,969 |
| Oats, cts. | 7,990 | 490,284 |
| Corn, cts. | 6,015 | 232,413 |
| Rye, cts. | 920 | 20,048 |
| Beans, sks. | 7,818 | 488,181 |
| Potatoes, sks. | 30,753 | 803,178 |
| Onions, sks. | 630 | 84,580 |
| Hay, tons. | 2,019 | 95,110 |
| Wool, bales. | 25 | 49,447 |
| Hops, bales. | 88 | 7,805 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|----------------------|--------------------|----------------------|
| Flour, 4-sks. | 86,952 | 2,155,728 |
| Wheat, cts. | 337,276 | 8,289,119 |
| Barley, cts. | 5,998 | 2,755,001 |
| Oats, cts. | 21 | 11,773 |
| Corn, cts. | 1,636 | 30,946 |
| Beans, sks. | 688 | 264,557 |
| Hay, bales. | 1,449 | 57,621 |
| Wool, lbs. | 13,391,776 | 11,000,249 |
| Hops, lbs. | 11,208 | 1,093,090 |
| Honey, cases. | 33 | 6,496 |
| Potatoes, pkgs. | 750 | 169,304 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, March 2.—California dried fruits, steady. Especially firm for evaporated apples. Evaporated Apples, common, 5 @ 7 1/2c per pound; prime wire tray, 8 1/4c; wood dried prime, 8 1/2c; choice, 8 1/2 @ 9c; fancy, 9 1/4 @ 10c. Prunes, 3 @ 8c per pound. Apricots, Royal, 5 @ 7 1/2c; Moorpark, 9 @ 11c. Peaches, unpitted, 5 @ 9c; peeled, 12 @ 20c.

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Potash

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The object of the Grange is to increase the products of the earth by increasing the knowledge of the producer, which is closely observed in our Grange. We meet together, talk together, and work together, and strive to secure the entire harmony and good will which prevail in our Grange. We meet in the Grange as brothers and sisters, forming new acquaintances and renewing old ones. We meet in the Grange on the platform of equality and grasp the hand with the grip of fraternity, and feelings of love and respect are awakened thereby. We listen to the readings of essays and selections, and to the discussions relating to the farm, garden, fertilizers and crops.

The admission of women to full and equal membership, and their assistance in the workings of the Order, have been of incalculable value. The social relaxation from every-day duties inculcated and encouraged by the Order is fully enjoyed and keenly appreciated by the members. Our Thanksgiving and anniversary dinners and picnics are always looked forward to with great pleasure; also, our little lunches we have every meeting could not now be dispensed with.

We try to advance the cause of education. We especially advocate for our agricultural and industrial colleges and public schools that practical agriculture, domestic science and all the arts which adorn the home be taught in their courses of study.

No Grange, if true to its obligations, can discuss political or religious questions, nor call political conventions, nor nominate candidates or even discuss their merits in its meetings. Yet no one becoming a Patron of Husbandry gives up his right and duty, which belongs to every American citizen, to take a proper interest in the politics of his country.

A model Grange should live strictly up to these precepts of our Order. We endeavor to conform to all these precepts in our work, and I believe we have to a reasonable extent succeeded in doing so in our Grange.

SARA GILL.

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As it is sometimes necessary to know the ingredients of water used, a few simple methods for testing its purity are given:

To know whether water is hard or soft, dissolve a little white soap in alcohol and add a few drops of water under investigation. If the alcohol turns milky, the water is hard; if either unaltered or simply cloudy, it is soft.

To detect a copper percentage, add a little filing dust of soft iron to the water, leave it in for a few minutes and add a few drops of sal ammoniac. A blue colorization betrays the presence of copper.

For detecting carbonic acid, a small quantity of water is mixed with a like quantity of lime water. If carbonic acid is present, the fluid turns milky at once. Hydrochloric acid causes the turbidity to disappear.

Sulphur combinations are detected by adding a little water to the mercury in the bottle; this is closed and left to stand for a few hours. If the mercury assumes a darker surface, and, upon shaking, separates into grey powder, it is a sign that the water contains sulphur combinations.

Dissolved pure lime is proved by adding one or two crystals of oxalic acid to the water. A milky preparation betrays the presence of lime.

Sulphate of lime (gypsum) is recognized by the white precipitate caused by chloride of barium in the solution. The precipitate is not redissolved by nitric acid.

Alkalies and alkaline earths are detected as follows: Blue litmus paper is colored feebly red in dilute vinegar and dipped in the corresponding water. If the former blue color is restored, the water is alkaline.

An iron percentage is recognized by a few drops of nutgall decoction, which are added to the water. If iron is present, the water assumes an inky grey to black color. Also one drop of solution of ferro-cyanide of potassium colors ferruginous water blue.

Acids are ascertained by dipping a small piece of litmus paper in the water. A red colorization betrays their presence.

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| III. California Climate as Related to Vegetable Growing. | XXII. Egg Plant. |
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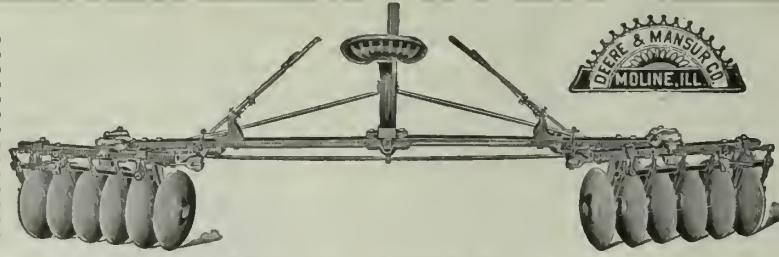
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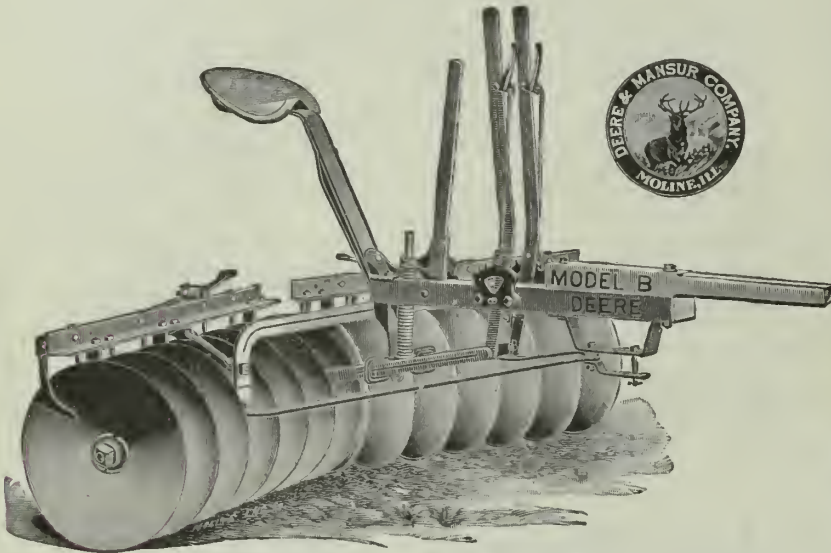
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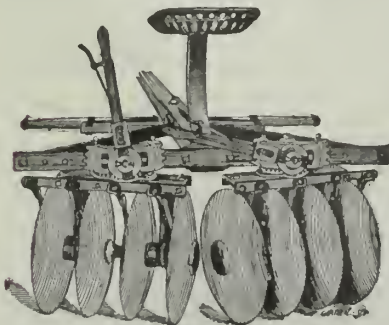
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 11

SAN FRANCISCO, SATURDAY, MARCH 12, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

California Onion Growing.

Fortunate would be the onion grower if he had a crop of bulbs, like that shown in the engraving on this page, ready for sacking at this date. There has been a great shortage of onions on this coast for the last few months. The vegetable driers for the Klondike turned onions into permanent form so long as they could get them at a considerable advance over usual prices, but their demand soon carried prices beyond their own reach. This, combined with purchases for northern shipment in a fresh state, resulted in an onion shortage such as the State has not known for a long time. Now there will be a rush among onion growers who have adequately moist land to get in the new crop soon enough to secure the advantage of earliest fall shipments to Alaska. This drouth promises to restrict somewhat the onion area this year, unless there should be heavy spring rains, which are now most ardently desired. And yet in a dry year California has a vast amount of land, which is usually too wet for the crop, which will this year be in the finest possible shape and will probably yield very large returns, if provisioning of Alaska should be warranted on anything like the scale which is now anticipated. It is now time to sow onions for a crop from the seed, though on moist land it can be done much later than this with good results. Our book on "California Vegetables," from which the engraving on this page is taken, gives a very full chapter on onion growing, describing in detail all the operations which are most satisfactory in California.

The picture shows a good crop in the Pajaro valley near Watsonville. It is enough to make a Klondiker's mouth water to see the huge piles of fragrant bulbs. The yield per acre is large; ten tons is a fair yield on good soil well handled, but California prize crops are greater than that. Mr. Byers at Arroyo Grande took thirty-three and a half tons from an



JAPANESE LABORERS HARVESTING ONIONS IN PAJARO VALLEY—FROM "CALIFORNIA VEGETABLES."

acre and won a prize of \$250 besides from an Eastern seedsman, and Mr. James Moss of Orange county secured four and a half tons from a single ounce of seed. These high-water marks are well to keep in mind and work towards, but of course they can only be attained upon the finest onion land, with the very highest kind of onion culture, for it must not be forgotten that it is easier to lose an onion crop than to secure it.

A Home-Made Railway.

The smaller engravings on this page show how available materials are being put to good use in transportation over one of the main lines of approach to the Klondike region. As was to be expected, the rush to the gold fields has stimulated unusual activity in overland transportation facilities. A year ago there was very little in that direction, but now ingenuity is taxed in devices for getting up more quickly and easily. Two wire rope tramways are in course of construction, railroads are pro-

jected, and if half of what is said is to be given serious consideration, in another year it will be as easy to ride to Klondike as it is in many regions that have been settled for years. Among the many projects for carrying freight and passengers devised by those who rightly judge that there is as much present money in the carrying trade as there is in getting out gold is the Skaguay and Lake Bennett Tramway Company, which is building a pole tramway from Skaguay to the international boundary and thence to Lake Bennett. The company's officials say that they can build it for about one-fourth what a narrow gauge road would cost; that its carrying capacity will be about one-third of a narrow gauge road and about twelve times that of a wagon road, and that when completed they can carry freight from Skaguay to Lake Bennett in twelve hours. The accompanying engravings give a good idea of the appearance of the country, progress of the road, etc. Another pole tramway is being built around White Horse rapids.



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ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, March 12, 1898.

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The Week.

Weather and Crops.

The weather is still an anxious subject of speculation. Within the week showers have visited the northern, central and extreme southern parts of the State but they were light and of small value. On the other hand, the temperature has been unusually high and evaporation has been rapid. Again rain is badly needed everywhere. The northern and central districts can stand a week's delay but in the upper San Joaquin and in parts of the southern tier of counties a good deal of damage by drouth is now a foregone conclusion.

The following data for the week ending 5 A. M., Wednesday, Mar. 9, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Last Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | .12 | 25.83 | 40.60 | 33.39 | 44 | 56 |
| Red Bluff..... | T | 12.07 | 22.53 | 19.70 | 48 | 72 |
| Sacramento..... | T | 8.55 | 15.37 | 15.38 | 48 | 70 |
| San Francisco..... | .13 | 7.45 | 20.68 | 18.21 | 46 | 70 |
| Fresno..... | .00 | 3.46 | 9.25 | 7.41 | 42 | 78 |
| San Luis Obispo..... | .00 | 5.15 | 19.74 | ..... | 44 | 78 |
| Los Angeles..... | .02 | 4.30 | 16.08 | 13.28 | 44 | 80 |
| San Diego..... | T | 3.18 | 10.91 | 8.42 | 48 | 74 |
| Yuma..... | .00 | 1.27 | 5.31 | 2.75 | 46 | 86 |

Den of Cattle Thieves.

During the week the sheriff of Santa Barbara county has discovered and broken up a gang of cattle thieves who for a long time past have been operating in a small way in the vicinity of Goleta. Their method has been to take cattle in small numbers to a ranch near Goleta owned by one of the thieves, butcher them and to sell to local dealers in meats. Three brothers, Andres, Francisco and Rodrigo Castro, and Abraham Quintero have been associated in the villainy. All are now in jail and their conviction is assured.

California Insects.

Assistant Professor C. W. Woodworth of the department of entomology at the State University is busy at work upon a complete descriptive and bibliographical list of all the genera and species of California insects. The making of the list is a great undertaking, for it will include all the way from 5000 to 10,000 species. No State has ever yet essayed the task of collecting a complete list except New Jersey. In the little State, famous among travelers by its mosquitoes, over 6000 species of insects were classified, and Professor Woodworth believes that California's list will far exceed in numbers that of New Jer-

sey. Professor Woodworth's catalogue of California insects will probably not be ready for publication for some months. The list will undoubtedly be eagerly sought by entomologists all over the United States, as the famous New Jersey report was much prized.

The Produce Markets.

The weather has been the most important consideration in the produce market this past week; and all lines susceptible to "dry year" influences have been more or less affected. Under such conditions business is always slow, both buyers and sellers generally preferring to wait. In wheat very little has been doing, chiefly because stocks are held above the views of exporters. The situation was well expressed by a dealer who said that to buy wheat today you would have to pay an advance on last week's price; but to sell, the price would have to be the same as last week. Barley is affected by weather fears much more than wheat, since the larger part of the supply comes from the dryer districts. An advance of 50 cents per ton over last week's quotations has been made. Oats are not quotably changed but are held at higher figures and are in strong sympathy with barley. Other cereals are as before.

Almost nothing at all is doing in dried fruits. Eastern buyers take from hand to mouth, and under this rule the movement is tediously slow. Some little stuff goes to Europe and the Yukon mines call for some moderate supplies. For this trade, peaches, apricots, apples and pitted plums are mostly in favor, and of these goods the last steamer carried about 46,000 pounds. Prunes are not wanted for this trade because of their useless weight of pits.

The livestock market is strong and looking up. There is no quotable advance in beef but the market is very firm. Mutton is higher but there is no change in hogs.

About the only transaction of the week out of the routine was the sale of a large lot of low-grade honey, which has been on the market here and in the southern counties for a long time, on German account. It is designed to take the place, so it is said, of a low-grade honey usually drawn from Cuba. This sale cleans up the market in good shape but at the same time it cuts off the bee men from any large and cheap source of bee food.

The Free Market Agitation.

At a meeting of the permanent committee representing the producing interest, named by the Free Market Convention recently held in this city, the following resolutions were adopted:

WHEREAS, It is essential that in beginning their work the members of this committee should reach a complete and clear understanding among themselves as to the precise objects for which it is to work, and the methods so far as they yet appear, said understanding to be in the light of the history of the movement and our specific instructions, so far as they go. Therefore, to this end,

Resolved: 1. We understand the term "free" to be applied to the market because the law directs that no rental be charged to those selling therein. We know of no other reason.

2. We have no intent or desire to interrupt the relations between growers and commission merchants, nor shall we concern ourselves as to who shall sell produce in the market. We do not propose that the State shall incur any unusual expense, or see any necessity for it, nor for the appointment of any officials not required by the law, or for those during our probable term of service.

3. Affirmatively, under our instructions, we shall strive, 1st, to increase the facilities now given for the sale of produce arriving by water; 2nd, to procure equal facilities for the sale of that arriving by rail; 3rd, to concentrate the entire traffic from first hands as completely as possible on the State property; 4th, to secure its regulation, when there, in such wise that, so far as possible, no producer shall be able to deceive in the quality of his produce and no agent in making his returns.

4. We understand that we have been invited by the Harbor Commissioners to advise them in relation to matters as to which, as producers, we are specially informed and concerned and to aid in promoting harmonious action in reference to the free market by all interests concerned or involved.

5. To the end that, before seeking a formal interview with the Harbor Commissioners, we be ourselves more fully advised, there shall be appointed from our number three sub-committees of two each as follows:

A committee to confer with the Harbor Commissioners, whose duty it shall be to confer informally, from time to time, with the members of the Harbor Commission and its engineer, endeavor to ascertain their wishes and judgment and such information as will aid us in the discharge of our duty.

A committee of conference with the commission merchants who shall endeavor to meet a similar committee from the commission merchants that any apparent conflicting interest may be removed.

A committee of conference with the transportation companies, whose duty it shall be to call upon all transportation companies whose interests seem to be involved, ascertain how far we can rely on their co-operation, what additional facilities, if any, they will require and what injury, if any, they fear. Should any conflict of interest among transportation companies be disclosed, the committee to seek to compromise the same so as to secure harmonious action.

The committees appointed are as follows: On Conference with Harbor Commissioners—Russ D. Stevens and J. M. Moore. On Conference with Commission Merchants—John Swett and S. S. Peck. On Conference with Transportation Companies—W. P. Cragin and W. L. Overhiser.

Electrocuting Johnson Grass.

Several Fresno electrical experts are experimenting with an electrical apparatus for "electrocuting" Johnson grass. They propose to first construct a machine to destroy Johnson grass, as it is one of the most obnoxious plants with which farmers have to contend. The plan is to secure a 10-horse traction

engine and fit it up with an apparatus for generating electricity. The electricity will be applied to the Johnson grass through a jet of water which will form a perfect conductor. The engine will pass over fields where the grass is thick and a jet of water will be played upon the growth. The electricity will pass through the grass, withering it to the uttermost roots. It is claimed that the cost of killing grass in this way would be small compared with the present method of digging it out every few months. The machine will go from farm to farm like a harvester, electrocuting the grass, and in this way be able to accommodate all who desire its services.

Santa Clara in Good Condition.

SAN JOSE, March 7.—A slight shower of rain fell here to-day, which, although not badly needed at this particular time, was very thankfully received by all, as it dispels all fear of harm resulting from the recent frosts. With even a moderate amount of rain in the latter part of this month, or during the early part of April, the crops of hay and fruit will be much larger than those of the past two years. There is at present plenty of water in the valley for irrigating purposes, which, with occasional light rains, will be sufficient for the season.

Weather and Crops.

SUMMARY OF THE REPORT OF THE U. S. WEATHER SERVICE FOR THE WEEK ENDING MARCH 8, 1898.

The deficiency in rainfall is such as to cause anxiety among the farmers. Good spring rains are much needed. In the southern portion of the State the lack of sufficient rain is already apparent, and grain is making but a poor growth. Pasturage is scant, and in some sections stock is already suffering.

The temperature has been generally above the normal, ranging from 3° to 8°. Fruit trees are blossoming; almonds, apricots and early peaches are in heavy bloom in favored localities. In the northern coast counties conditions are very favorable for good crops of all kinds. In the Sacramento valley grain is growing nicely, with a larger sown acreage than that of last year, but more rain is needed. Rain is greatly needed throughout the San Joaquin valley. Reports from the extreme upper end of the valley and near the foothills along the east side are of a favorable character; but in the central and western portions of the valley grain and pasturage are already suffering where not irrigated. Abundant spring rains must fall to insure crops. Similar conditions prevail in the valleys of the coast counties south of Santa Cruz. In the interior of San Luis Obispo and Santa Barbara counties and in southern California there has already been serious injury to grain, and rain is needed to prevent stock suffering from lack of feed.

General Summary.

SHASTA.—Clear and warm. Apricots and almonds in full bloom. Crops doing well.

BUTTE.—Grain looking well. Almonds out of bloom, also early apricots. Peaches and plums well set. Orange trees will show early blooming if weather continues warm.

GLENN.—Farmers busy plowing. Growing grain doing nicely; about the usual average sown.

COLUSA.—All seeding over. Larger grain acreage than last year. Grain looks well.

YOLO.—Trees blooming rapidly. Plowing resumed. Prospects still favorable for heavy crop.

SACRAMENTO.—Crops in fair condition. Rain needed.

SOLANO.—Warm weather brought out the buds. Excellent prospects for fruit. Growing grain doing well.

SAN JOAQUIN.—Crops doing well, but much more rain is needed to mature.

MEJER.—All crops doing very well, but need a soaking rain. Sandy land showing better than the heavy land.

STANISLAUS.—Some grain shows need of rain; bulk of it doing well. Farmers inside of canal district are irrigating and their grain looks well; those outside need rain.

KERN.—Warm and no rain. Cold weather followed by rain within two weeks will insure heavy crops. Larger acreage than before. Sheep shearing commenced.

FRESNO.—Farmers still irrigating. Wheat growing, but needs rain. Very dry in some sections of county, with no feed. Mild weather; trees blooming.

KINGS.—Very dry. Grass looking fairly well, but needs rain badly.

TULARE.—Dry. Rain much needed.

SONOMA.—Crops looking well.

NAPA.—Grain, hay, vines and fruit in fine growing condition. Unless adverse conditions occur all crops will be unusually large. Almonds in bloom. Still pruning vines and orchards. Increased acreage of wheat and barley.

ALAMEDA.—Grain looks well. Plowing. Peach trees in heavy blossom. Good grazing.

SAN MATEO.—Crops doing well. Fruit will be early this season if no frosts.

SANTA CLARA.—Trees in bloom. Weather favorable for growing crops. Apricots and almond trees dropping blossoms. Fruit well formed.

SANTA CRUZ.—Crops in fine shape.

SAN BENITO.—Grain and feed alive, but not growing much. Unless rain comes soon the grain will die. Prospects for fruit good.

MONTEREY.—Crops growing nicely. Rain much needed.

SAN LUIS OBISPO.—Good crops west of range; east of range rain would improve feed, but would do no good to grain now.

VENTURA.—Many farmers have given up looking for rain and are now anxious concerning pasture for stock. Cattle will suffer more than horses. Spring shearing of sheep will soon commence. Heavy orange and lemon crop.

ORANGE.—Cool and dry. Grass and small grain need rain badly.

SAN BERNARDINO.—No rain. Orange orchards without irrigation facilities are drying up.

RIVERSIDE.—Warm and dry. Grain country in great need of rain.

SAN DIEGO.—Acreage of wheat about the same as last year. Owing to dry weather there is little prospect of cutting except for hay, although rain this month would change matters. Oranges and lemons were never in better condition and reports from different sections show that the season's yield is one of the heaviest known.

IMPERIAL SUMMARY.—Fog and warm sunshine during the week combined to make ideal weather for grazing. Farmers busily plowing and preparing soil for cultivation of early crops.

LOS ANGELES SUMMARY.—Warm, dry weather continues. Early sown grain looks badly; late sown making good stand in sections, but rain is badly needed for all purposes. Early deciduous fruits blooming generally.

AGRICULTURAL REVIEW.

CALIFORNIA.

Butte.

CHICKENS AND SHEEP AS "SIDE ISSUES."—H. A. Woodworth, who farms the Fagin ranch, three and one half miles south-east of Gridley, is considerable of a chicken fancier, says the Gridley Herald. He has seven or eight pens of fine birds, comprising Plymouth Rocks, Black Minorcas, Buff Leghorns, Light Brahmas and Indian games. The latter is a fine table bird and the males are richly plumaged. Mr. W.'s experience leads him to commend the Buff Leghorns as the most prolific layers, while the Black Minorcas produce the largest, whitest and most marketable eggs. Mr. Woodworth also has a flock of some seventy or eighty sheep which have produced so far this season 150 per cent of lambs. The ewes are grade Shropshire. The flock was started some twenty years ago from some lambs which Mrs. Woodworth had as pets when a girl. Besides the wool, of which no account has been kept, over 1000 sheep have been sold from the increase. The last sheep of the original flock was an old ewe which died two years ago, being then eighteen years old. Mr. W. makes an estimate that the ewe has furnished 250 pounds of wool and produced as many as twenty-five lambs during her eighteen years of life.

Humboldt.

BUTTER FOR KLONDIKE.—The Diamond Springs Creamery has been bought by F. D. Smith, Supt. of the Port Kenyon Condensed Milk Co., who proposes to largely extend the business of the establishment, combining the manufacture of butter, condensed milk, and preserve pure cream. A large proportion of the butter will be packed in cans and soldered air-tight, for the Alaska trade. The pack of this manufacture will for the present run from twenty-five to fifty cases per day, of forty-eight cans to the case.—Eureka Watchman.

SUGGESTION TO DAIRYMEN.—We wish to make a suggestion to our readers who are dairymen, viz: Since the strife for large results in milk product have exhausted every avenue, that no further progress in this direction seems available, would it not be well to consider the idea of raising the quality and flavor by the introduction of cleanliness which shall prevent all chances of undesirable odors or taints? Technical dairies are maintained in the East which command a dollar a pound for butter the year round. The cows are kept in clean pastures and barns; are carefully groomed, the udders washed before being milked, the barns are kept scrupulously clean, and nothing but good, pure, healthy milk allowed to go into the separator. Compare this picture with the practice in daily vogue with many, and perhaps a majority of the patrons of any of our creameries, and it needs no discussion to arrive at the conclusion that widely different results are obtained in the butter produce, and examination of the remains left in the separator after a couple of hours run ought to be sufficient to induce milkers to organize a "clean milk society." We will not here mention some practices we have seen at many ranches, but simply ask our friends to consider this matter, and see if the road is not open to greater advance and consequent benefit in this direction than in any other at this time. It might be too much of a revolution to elevate one of our creamery communities at once into a thoroughly technical dairy, but by organization, and having a committee of inspection to inspect the various ranches embraced at any time they see fit, certainly present conditions could be vastly improved.—Eureka Watchman.

LIME FOR FARM LANDS.—It is well known that clover after a few years will not flourish, in fact it gets decidedly sick, and in this condition falls an easy prey to the cutworm, and even when not attacked by this voracious pest, becomes unprofitable to cultivate. Mr. Ayres for the last six months or so has made the land of this county a study, and from chemical analysis of the land and personal interviews with nearly every farmer in the county has found that the crying need of the whole county, and this valley in particular, is lime, as nowhere in this State is that element more deficient in the soil. Mr. Ayres spent considerable time in searching for lime, and has at last been rewarded, deposits having been found in three places which are very accessible. In a short time he expects, in conjunction with another party, to be able to place lime upon the market at such figures as will make it practical for agricultural purposes.—Ferndale Independent.

The driving to and fro of a large band of cattle over short sections of the county road is ruining the public highway, and is occasioning considerable discussion and comment. Some dairymen who live alongside the public road have adopted the plan of maintaining their own private runways, over which the cows come and go to the pasture. A couple of 1-foot 2-inch planks placed side by side make a good and cheap track, and the cows readily take to it, waiting for one another and stringing out on this walk going to and from pasture.—Watchman.

Kings.

HANFORD, March 4.—Owing to scarcity of wild feed and the long protracted drought here, thousands of sheep are to be shipped by rail to Sonoma, Napa, Butte and other more northern counties. In the irrigated sections of Kings county cattlemen are renting alfalfa and buying hay wherever they can. Baron von Schroeder has sent in 3500 head from San Luis Obispo.

SQUIRREL PEST.—C. M. Webster wrote the following letter to the Hanford Sentinel: "What this country needs is a squirrel law to compel every farmer, whether he be a land owner or tenant, to put out poison for squirrels sufficient to kill the squirrels on his place. Such a law should designate days to be appointed by the Governor, which should be in March and September of each year. The State should furnish the poison at cost, and designate a place in each town for distribution of such poison, fixing a fine of \$50 to every farmer who neglects to comply with such law, such penalty to go to the benefit of the informer. If such a law could be enacted and enforced, the squirrel pest would soon be eradicated, and the farmers generally would gladly comply."

Los Angeles.

THE ORANGE SITUATION.—Oranges have been moving forward during the past week in fair quantities, prices realized by the exchange having averaged about \$1.50 for fancy Navels, f. o. b. A good many growers are holding back for better prices, and they appear to be justified in their expectations, where they have sold fruit. The shipment of frozen oranges to the East has greatly demoralized the market there, and has given dealers a chance to hammer down prices. Parties outside of the exchange, who have been selling f. o. b., are becoming quite discouraged. The fact is that there have been very few actual f. o. b. sales made, most of the outside fruit having gone forward on consignment. The Pomotrip of Feb. 24th has the following in regard to the situation: "The most sensational feature of the week's trade is the acknowledgment of the f. o. b. men that that system has entirely gone to pieces and must be abandoned. The enormous crop has had something to do with it, but the immediate trouble is the necessity that has caused so much fruit to be rushed Eastward. Last season there was a little less than 3200 cars dispatched by Feb. 22nd. This season 5127 cars have been shipped to same date. Here is a difference of 1927 against the season of 1898. This alone would make trouble for the f. o. b. men, as well as it would make prices lower on selling delivered sales.

No one can point to any one cause and say: 'This did it.'—Los Angeles Times.

FIREPROOF TREES.—The large section of mountain land north of Pasadena, from which the timbers were burned off by the forest fires which raged there during the past few years, is not only unsightly, but is a menace to the water supply of the valley below. It is estimated that about 100,000 acres of mountain timber have been burned off. The people who have erected the beautiful town of Pasadena are not the ones to sit down quietly without trying to remedy this condition of affairs. It is now proposed to plant the burned district with *pinus tuberculata*, a variety of pine said to be almost fireproof, and which grows rapidly. The tree grows in San Bernardino county, and is said to have turned back mountain fires.—Los Angeles Times.

LOS ANGELES, March 4.—Meat Inspector Hughes, aided by the police, has discovered that horse meat is being sold in this city to a considerable extent, principally in the Italian quarter. Yesterday, at the butcher shop of B. Gattener, at the corner of Ord and Buena Vista streets, he found the carcass of a colt with the head and legs gone. The carcass had been concealed, and evidently the butcher intended to sell the meat. He has been suspected for some time. An Italian butcher named Cicci, whose shop is on Main street, was also found with horse meat in his possession. As none of the horse meat was exposed for sale at the time the inspector found it, it is doubtful if these butchers can be convicted, but a careful watch will be maintained.

Merced.

OLIVE DISEASE.—It is reported that the olive knot, a disease that has long played havoc with the olive orchards of the Mediterranean coast, has made its appearance near Merced, this State. The symptoms of the disease are woody excrescences upon the sap bark of the limbs and small knots on the leaves and twigs. At first the orchard produces heavily, but the fruit is of poor quality and soon spoils in picking. The overbearing of the trees soon causes them to weaken and grow sickly and finally die. No immediate danger is anticipated from the disease as the local horticultural commission will take stringent measures to prevent its spreading.—Blade.

Monterey.

SALINAS, March 4.—The Spreckels Co. has a large force of men at work constructing a mammoth reservoir on the land they purchased a few months ago from the Soberanes estate. A pump larger than the one at the Soledad Mission will be put in to carry the water from the Salinas river. It is expected that 300 acres of beets will be irrigated this year.

The Soledad Banner having made the statement that on Henry Miller's Peach Tree ranch cattle were dying by the hundreds, their skins taken off and the carcasses fed to the hogs, the San Lucas Herald rejoins: "We have interviewed M. K. Keef, foreman on the Peach Tree ranch, and ascertained that the Banner is decidedly in error regarding the matter. During the entire year just passed but fifty-four head of cattle have died on the ranch amongst a herd of several thousands. The death rate among cattle during good seasons when there was plenty of feed was much larger. Mr. Keef also informs us that none of the cattle on the ranch died from starvation. He also informs us that for several months there have not been more than two dozen hogs on the entire ranch."

Orange.

Two carloads of Orange county honey were shipped from the Santa Ana, southern California, railway depot yesterday afternoon, consigned to New York City. Bee raisers report that the bees are gathering and storing away some honey at present, but from indications the crop this season will be light.—Blade.

Riverside.

CROP CONDITIONS.—Nearly all the grain and particularly the early sown grain is doing well, and another good rain the farmers say will insure a crop that will be satisfactory. The grain is of good color so far, and is growing slowly, though the continued cold weather during the past few weeks has been holding it back. A considerably larger acreage has been planted this year than last year.—Perris letter in Riverside Press.

San Benito.

BEEF CONTRACTS CANCELLED.—Supt. Morse of the Watsonville sugar factory was in this vicinity last Tuesday, and we understand for the purpose of cancelling the beef sugar contracts made some time ago. The outlook in this and San Juan valley is not very propitious, and the farmers who had agreed to plant their land to beets have been released and are at liberty to cultivate any kind of a crop they may see fit.—Holister Bee.

San Bernardino.

Two years ago was an exceedingly dry season, the total rainfall for the entire year, from July 1, 1895, to June 30, 1896, being only 9.51 inches, and yet we had 3.96 in March and 1.14 in May of 1896. If we can get as much this year the dry season scare may yet prove unfounded.—Citrograph.

San Diego.

WINTER VEGETABLES.—A farm of San Diego county, whose lands lie in a frostless district, shipped a few boxes of fresh tomatoes a short time ago to Chicago. At the time of shipping them the market quotation was very high for this vegetable, the retail price being as high as 10 cents a pound. Of course, the jobbing price was much below that, but the fact goes to show that there is more money in winter vegetables than even in oranges—certainly more than in lemons, yet to hacco and lemons are nearly all the talk. Three or four years ago steps were taken by the San Diego Chamber of Commerce to interest the farmers in growing vegetables to supply the Eastern demand at this season of the year, but the railroad companies gave little encouragement to the undertaking—not only refused to make low rates to help start the business, but neglected, so it was stated, to properly ventilate the cars used in shipping the vegetables, and the result was considerable loss on the first shipments, hence the enterprise was, we believe, abandoned.—San Diego Union.

HAY FOR SAN FRANCISCO.—During the past thirty days the grain and commission firm of Dulin, Marriner & Co. has shipped north to San Francisco by steamer over 500 tons of San Diego county hay. This is the first hay ever sent to San Francisco from this port; but as the Pacific Coast Steamship Company has made a lower rate on hay, it will probably not be the last.—San Diego letter.

San Joaquin.

HORTICULTURAL COMMISSIONER TUCKER of San Joaquin county is keeping a sharp official eye on importations of fruit. During February, a total of eighty-five packages consigned to the Stockton trade were rejected. The ordinance calling for the spraying of infected orchards is being strictly enforced throughout the county.

CROP CONDITIONS.—Reports received from various parts of the county place the rainfall of last week at from one-third of an inch to an inch in the more favored sections. In this vicinity and around Lockford the precipitation was the greatest, and indications point to a bountiful harvest in northern San Joaquin. At Farmington and around Oakdale the rain has greatly encouraged the farmers, who have in a larger acreage this season than ever before. New Hope was favored by about an inch of water and Linden had about the same

amount. The west side did not fare very well, and the crops there must have more water inside of a week or ten days at the outside.—Lodi Sentinel.

Santa Barbara.

PASTURE CONDITIONS.—A ride through the ranches Salsipuedes and San Julian on Tuesday last found the grass much revived by the late rain, bringing it back to about what it was on October 1st. A trifle over one inch had fallen and will hold it up for a good part of March, giving stock, which look poorly, a chance to improve; but we must have much more in order to insure their welfare. Two inches during March will produce grass that will carry stock through another season, but early fall rains must follow or the same condition now confronting the stockmen will be upon them again. This is a most trying time for the stockmen, and it is pitiable to see the condition of the herds, which usually at this time of the year are in fine condition.—Lompoc Record.

Santa Clara.

GILROY, March 7.—Gilroy's citizens are rejoicing over the news that the Messrs. Spreckels have purchased the Soap Lake tract of land of 9900 acres, lying southeast of Gilroy. Prominent citizens say it means the erection of a sugar factory and the development of this garden spot of the State. The tract is pronounced by experts as the best in the State in wet or dry seasons for the cultivation of the sugar beet.

Santa Cruz.

THE Western Beet Sugar Co. is offering farmers of this valley an opportunity to contract for beet acreage this year, and will strike out the objectionable clause relative to delivery of beets at either Watsonville or Spreckels. The beets will be delivered at the Watsonville factory, and contracts will so read. This does away with the feature of the contract objected to by local growers, and it is to be hoped that Pajaro valley's beet acreage will now be increased.—Pajaronian.

Shasta.

ORCHARD PESTS.—We are sorry to learn that some of the orchards in this valley have become infested with fruit pests. The codlin moth and something which is supposed to be San Jose scale have made their appearance, and some of our orchardists are making preparations to eradicate the pests, if possible. W. F. Wiley, who has a promising young orchard here in town, is going to keep his trees healthy if spraying will do it. O. Lewis, the nurseryman, is also making preparations to keep the pest away from his trees. J. F. Bowman while below purchased a spraying outfit, and is only awaiting the proper time to begin active operations. The McArthur boys have ordered a spraying outfit and have written to leading horticulturists for minute instructions as to the modus operandi.—Fall River Tidings.

Solano.

CROP CONDITIONS.—At this season of the year the agricultural prospects in this vicinity were never better. The lateness of the rainy season gave every opportunity for the farmers in the "hills" to sow a large acreage, while on the islands a more favorable season has not been known in many years, and, compared with former years, this year's crop on these fertile spots should be something enormous. All this will have a tendency to make Rio Vista very lively during the summer and our tradespeople will undoubtedly benefit thereby.—Rio Vista News.

Sonoma.

HOP PLANTING.—At Guerneville a large acreage is being planted in hops. Acres of vineyard are being added. Last year the Guerneville district shipped its first large consignments of fruit to the outside world. Now that the farmers of the district know that they can grow splendid fruit there they will largely increase the output. Everything is very prosperous in the picturesque Redwoods district.—Santa Rosa Democrat.

Sutter.

BEEF PLANTING SEASON.—The planting season for sugar beets is during March and April, and it is high time that the farmers here are making some preparations in this line if they expect to deliver any beets at the factory this season. The California Beet Sugar Refining Company offers \$4.50 per ton for beets and the railroad company has agreed to charge only \$1 per ton, thus netting the grower \$3.50 per ton. Contracts will be made by the company from as small tracts as three acres. As the beets can be grown on summer fallowed land, the farmer will not be out the use of the land for seeding next fall, and will stand a good chance of making a good profit out of the beets besides.—Sutter Farmer.

Tulare.

A WINDY FIZZLE.—The storm foretold came down our way And fumed and sputtered round all day. The wind blew hard and blew again, But brought to us but little rain.

—Visalia Delta.

WASHINGTON.

CHICAGO WANTS WASHINGTON WHEAT.—The wheat market throughout the Palouse country has received a shock by the appearance of Ted Cardin, representing J. Q. Adams & Co. of Minneapolis, who is trying to buy 250,000 bushels of wheat for Eastern shipment, and offering prices that local buyers cannot duplicate for shipment to the Pacific coast. Cardin offers 63½ cents free on board for wheat testing fifty-eight pounds to the bushel, which is one pound less than the test for No. 1 required for coast shipment. This is for bulk wheat, which is equal to 66½ cents on board for sacked wheat, or 65 cents in the warehouse. This is 6 cents better than local dealers offer, 59 cents being the price offered to-day. Cardin bought 100,000 out of the Farmers' warehouse to-day at the price offered above, and the market is in a furor. It is expected that the price will advance in all Palouse country points in consequence. This is the first time since 1893 that wheat has been shipped to Eastern markets in any considerable quantity.—Colfax (Washington) Special.

HORICULTURE.

Olives in Riverside County.

By J. A. BROWN, at the San Jacinto Horticultural Society.

In assigning me the subject of olive culture, I am glad that the committee added in the San Jacinto valley, for so much has been said and written about olive culture in this State generally, that I fear there is nothing left for me to add. I repeat I am glad, because it narrows the question of olive culture down to our own individual experience, and by a discussion and comparison of our experiences, which I trust will follow the reading of this paper, we may be able to arrive at a conclusion as to which varieties are best suited to the climatic and other conditions of this valley.

The severe frosts that we have had this winter will

have its benefits in prescribing the area suited to olive culture, and, even within that area, will suggest the prudence of planting only those varieties the fruit of which mature early. It is well for those who contemplate planting olive trees to bear in mind that the fruit will freeze at a temperature that will not affect the foliage. I learn this from my own orchard, a part of the fruit on a few trees having been frozen.

Early Ripening Desirable.—As the ripening of the Mission variety extends from the middle of November until the end of February, that variety from an orchard less protected from frost would not be as desirable as those varieties that mature in November. Until all the varieties that have been planted in this valley come into full bearing, we will continue in the experimental stage. I have thirteen different varieties and next year I hope to be able to report upon the bearing of quite a number of these; meantime I have only six in bearing, and some of these for the first time this season.

Budded Varieties.—Last year I referred you to some 400 trees that were budded on picholine roots. I am now satisfied that all the advantages claimed for them by the nurseryman from whom I got them will be realized. The budding does not increase the number of suckers, as was feared, and for poor, shallow soil the roots of the hardy wild olive have an advantage over the more delicate varieties. I planted those on my poorest soil, and they are now equal to the best trees I have of their age, and, as an evidence of their vitality, a few of them bore fruit this season though not yet two years old. In Europe the practice of budding on the wild olive roots is generally followed.

Planting and Location.—One word with regard to planting an orchard. I would advise getting good, large trees. The cheapest trees that I have are those that cost most on account of their increased size. Even though we cut them back in planting to 18 inches from the ground, they have the roots and soon make a tree.

As to the location of an orchard, I am disposed to believe that the olive bears best on hill-side or rolling land; a comparison of the productiveness of the orchards in this valley demonstrates this, and I expect the same is true in Italy, for, with but few exceptions, all the olive groves that I observed in that country were on hill sides. I cannot give you any reason for this further than that the roots like warmth and good drainage, and, if this be the real cause, a large portion of the mesa land in this valley should be favorable to its cultivation. Unlike Italy, however, it is necessary in this dry climate to irrigate bearing trees if we would get good results; but as an evidence of what too much water will do, I will state that a tree standing near a leaking hydrant had the effect of shrivelling all the fruit, as though it was frosted, and within a few days after stopping the leak the fruit assumed its normal condition.

Yield of Olives.—It is conceded that there is no section in all California better suited to the olive than this valley and neighborhood, because of the exemption from scale, but we must ever be vigilant, as we have no guarantee that this condition will be continual.

The trees in this valley, where favorably situated, yield more abundantly and the fruit is larger than the average for its kind, and, not only this, but I believe that with good treatment a large crop can be had from the same trees annually. Such, at least, has been my experience; some trees that bore very heavily last year had to be supported this year, on account of the weight of the fruit.

This season from 393 nine-year-old Mission trees we have taken 9000 pounds of fruit, and there are still unripe and unpicked about 1000 pounds more. Some of those trees produced as much as 200 pounds each, while from others we only got a nominal amount, but I consider the crop a satisfactory one, as it shows a gross yield at present prices for the fresh fruit of over \$100 per acre. I do not, however, anticipate a continuance of the present prices, for when the thousands of young trees recently planted come into bearing the American people will not have been sufficiently educated to the ripe pickled olive and the consumption of pure olive oil.

Marketing.—Every man who has an acre of olive trees, or expects to have, should begin now and interest his Eastern friends in the California product, and press for legislation in favor of pure food, so as to protect our pure oil from competition with the adulterated article. If anyone of you suppose that when your orchard comes into bearing all that you will have to do is to ship your product East to find a market, let me give you some of my experience in this line:

Only a few days ago a letter came from an Iowa firm saying that the olives had arrived, but were spoiled, being dark-colored, and that they did not consider them fit for use. Another, almost by the same mail, from Cincinnati, saying that, having tried the California ripe olives last year from another house and found them unsatisfactory, they declined to try mine unless I prepaid the freight, notwithstanding my guarantee that, unless the quality was strictly first-class, there would be no charge. I, however, prepaid the freight and sent them on, an now

await their report. In the Iowa case I had to contend with the dealers prejudice against the dark colored fruit, and in the Cincinnati case to restore lost confidence.

In marketing my product, I have been supplying the merchants direct without the intervention of the commission agent; by so doing I have a trade though not so large in volume yet in area, reaches many of the States in the Union.

Local Sales.—Do you as olive growers want to make your market? Then I say again take a part now in educating your Eastern friends to the superiority of the ripe fruit, and, by the time your trees come into bearing, it may be that the consumption will have increased relatively with the production. We know from the consumption of pickled olives in this State what to expect when all other sections have had like opportunities to acquire a taste for them. Take, for instance, this little town of San Jacinto and neighborhood with a population of about 1500. My trade alone this season during the past two and a half months amounts to 154 gallons; double this for the entire season and we have 308 gallons; at which ratio it would require over 14,000,000 gallons, or in weight equal to 35,000 tons, to supply the demand of this country.

Strawberries for Southern California.

We have had several very interesting papers during the last few months on small fruit growing in southern California, but the subject is always charming and we like to multiply experiences. Mr. D. G. Edmiston writes for the Los Angeles *Cultivator* the deductions from his progressive work.

Essentials to Success.—The commercial grower should be conveniently located relative to his market; that is, within easy driving distance, or should have good shipping facilities, and his soil, if not already rich, should be made so, and plowed deep and made thoroughly fine and smooth before planting is done. Then an abundant supply of water should be available, for without water in abundance all other conditions will be unavailing. As an aid to the retention of moisture, surface should be cultivated shallow and raked fine after each irrigation, by some such cultivator as the Planet, Jr., with rake attachment for fining the surface of the soil, thus making a dust mulch, which prevents the evaporation of the moisture from below.

Rows should be marked off two and a half to three feet apart, and for hill culture the plants set one foot apart in the row. If the matted row system is adopted, plants need not be set nearer than two feet apart, thus saving one-half in the item of plants.

There are hundreds of ranches and small places in the country and around the city having all the advantages and conveniences for growing the strawberry in its perfection on a small scale, or for home use, whose occupants rarely if ever taste the delicious and healthful fruit, and who could have the advantages of a home supply at very trifling expense.

Varieties.—The question of varieties is sometimes a very perplexing one, either to the amateur or commercial grower. New varieties are continually being introduced, and very properly seeking favor, for progress comes through the introduction of new varieties and new methods.

The writer remembers when our list of varieties hardly exceeded half a dozen, and but one of that number would now be regarded as having any merit whatever, and while multiplied hundreds of varieties have been introduced and passed into oblivion since that time, now and then one of special merit has been introduced and retained. And still we are looking for something better—something far exceeding anything yet known, and we surely will find it in due season, so let us have patience with the new varieties, for in them lies our hope of greater success in the future.

Call varieties by their proper names. I find considerable confusion in this direction here on the Pacific coast. Ignorant or designing parties have introduced old varieties under new names, thus creating confusion and distrust of the trade.

Desirable Characters.—In selecting varieties for planting, such should be selected as have some prominent characteristic, something that adapts them especially for the object in view. If you want an early variety, it is not enough that it be early, for there are scores of early varieties that are worthless, as money producers, but it should have beauty of form and color, to render it attractive, and productiveness to render it profitable. If you want a late variety it should have large size in addition to the above qualities. If you propose to grow "fancy" berries, such varieties should be selected as give a large per cent of large, well shaped and highly colored specimens.

Ordinarily the grower should rely upon three or four varieties for the main crop, selecting such as

are best adapted to the requirements of this market, and in addition should give trial to promising new varieties on a small scale.

A Preferred List.—While I have some decided views as to the best varieties to grow in this locality, I would not dare undertake to name a list that would be best for all growers. Indeed, I could do nothing more than to suggest a few varieties that I know by experience or observation to have succeeded well.

The following varieties are named as near as possible in the order of ripening:

Lady Thompson.—After growing this variety for three years I have found it very early and wonderfully productive of beautiful berries, commanding the highest prices in its season. An attempt has been made to rename this variety but probably without much success.

Laxton's Noble.—Also early and of large size and good quality.

Arizona Everbearing.—A well-known and profitable variety for nearby markets; texture a little soft for shipping.

Brandywine.—A late variety of very large size and great beauty and firmness; excellent shipper.

The Tennessee Prolific and Tubbs.—Have both proved excellent bearers of good sized, well-colored fruit; season medium.

Haverland.—Has also proved a good summer bearer, though the early ripening berries were not so satisfactory.

I have on trial Glen Mary, Marshall, Clyde, Bismarck, Margaret, Nick, Ohme and a dozen others, most of which are claimed to surpass all previously introduced varieties. We will see later.

Olives in Tulare County.

By GEO. MCALISTER at the Farmers' Institute at Porterville.

I have on my place grown from cuttings, by me, the following varieties: Manzanillo, Nevadillo Blanco, Columillo, Rubra and Picoline, all in full bearing, which gives me the opportunity to select from these varieties the ones best suited to our climate. While they all bear well, my choice for pickling is the Manzanillo. While it is good for oil, its size and early ripening, which is in October, gives it the advantage over many of the other varieties.

The Nevadillo Blanco, while a smaller fruit, is a regular and heavy bearer, and one of the best for oil, but makes a very good pickle. It also ripens in October. I find the early ripening of these varieties gives them great advantage, as they can be cared for before the early frosts. The Nevadillo is not a good variety to set alone, but my experience is that the olives bear better and heavier by mixing the varieties in the orchard.

J. J. Cairns of Lindsay has the largest bearing orchard of the Mission variety in the county. They bear well, which speaks well for the olive industry in Tulare county and shows that our soil will produce olives as well as oranges and wheat.

Now for a few remarks in regard to the pickling of the olive. I find that the different varieties must be cured separately, as must those of different degrees of ripeness. There is no set recipe for pickling. Each season brings its own peculiarities. Olives are sensitive to climate and atmospheric changes, thus requiring almost twice the length of time some seasons to extract the bitter from them. There is a most promising future for olive culture in this State, and work of the highest importance is going on at the University of California regarding soils, locations and varieties, the amount of oil contained, and other matters connected with the industry.

As a food, they have no superior; and for profitable cultivation, they are confined to California. There is an unlimited market in the United States and Canada. The principal varieties grown in olive-producing countries, both for pickling and oil, are now bearing in California; and when both the ripe pickles and pure oil are produced in sufficient quantities, there is no doubt they will displace the inferior articles found in our markets to-day.

FLORIST AND GARDENER.

California Vegetable Growing.

By MRS. M. J. TYLER, at the University Farmers' Institute at Porterville.

The subject of raising vegetables is as old as Adam, although there is no particular mention of them in the history we have of the first garden, nor have we any handed-down ideas as to what rules or regulations he followed in producing the perfect edible. As to horticulture, we are well aware how disastrous a venture he made in that direction. We are compelled to believe, however, that as Adam found everything ready growing to his hand in the line of fruits and vegetables, without any thought or exer-

tion on his part, in the direct line of heredity the average Tulare county man is a close relation, having struck back, as it were, as the first and most important element in preparing to raise vegetables is to have a "decided inclination to do so," which from my observation of many years' residence among the natives does not prevail to any great extent.

The Old Times.—Perhaps a few reminiscent thoughts and instances with regard to the early day ideas of vegetable raising and diversity of opinion with regard to suitableness of soil, etc., might be interesting. Many years ago there were wealthy people here, much more so than at present—those who had cattle, sheep and horses on a "thousand hills." But if you were invited to dine with the wealthiest, the only vegetable was beans the entire year round, cooked and served three times a day, with a flavoring "a la spinole" of red peppers, the latter shipped from San Francisco in 100-pound bales. As a luxury but seldom used were potatoes from the coast near Bodega, and they were, as now, not very good.

Like a green oasis in a desert land were the "truck patches," so termed by the pioneers, planted by the grandparents of our neighbors, J. S. Lewis and Mrs. Robert Clark, of which the cowboys often told as something wonderful, and where they could enjoy what they termed a "square meal," with vegetables on the side. Upon asking them why vegetables were not generally raised they invariably astonished the newcomer by the assertion that it could not be done, things wouldn't grow here, this soil was only adapted to grazing, leaving you to infer that some magic must have been performed by our old friends to produce such grand specimens of the vegetable kingdom.

Vegetable Soils.—Another theory as to soil which was referred to—and even yet you will hear it advanced—was that you must have sandy soil, as the adobe would not produce good vegetables. Of course, it is not pleasant ground to work, but it has been demonstrated many times that the choicest vegetables will grow upon black adobe and with less trouble as to weeds than on the sand.

We have in mind a little spot of adobe right here in town, upon which, not more than 20 feet square, were raised last year sufficient onions, peppers, beans, cauliflower, tomatoes and cantaloupes for a family of five the entire season, having plenty for pickling, while a neighbor tells me she had all the tomatoes she could use from the same garden, thanks to the kindness of the raisers. I asked the lady if it was very hard work or required much time to produce these luxuries for the family, or if the head of the house had to injure his constitution in assisting. She replied that it was only pleasant pastime for herself and children, but she had to call upon her husband—or, rather, he took the task upon himself—to swear at the chickens, which a woman could not well do with dignity.

The greater part of vegetables will always be grown upon the bottom land, as, with the exception of the pestiferous crab grass (am not versed in botanical names, so would like to apply almost any bad name to it), the cultivation and weeding can be done by the improved tools with the aid of a horse; whereas, after irrigating the adobe, there is always danger of waiting just a little too long before undertaking the requisite cultivation for tender plants. Still, when one notes the variety and beauty of the flowers which many of our ladies have grown upon adobe here in Porterville and vicinity, we may know that vegetables will do equally well. Many have admixed soils for flower production, which, through necessity and the desire on the part of the men to have the best of vegetables fresh from the garden for their families, could be applied to the garden plot.

[It should be noted that what they call "adobe" at Porterville is really a very mild type of that article. It is a very excellent clay loam, which one who has to operate with the true adobe would consider a fine garden soil.—ED.]

The Recourse to Chinese Truck.—The advent of John Chinaman completed the Adamic inheritance of our sons and grandsons as to garden work, as we have heard it remarked thousands of times, "Oh, it is so much cheaper to buy of the Chinaman than to raise your own."

Right here we will quote a remark which appeared in the Tulare Register recently, made by the philosopher of that paper, Mr. Pillsbury:

Were our Uncle Samuel to send out men to plant and care for those seeds he gives away, such services to be also free to the recipients, there would be no dearth of vegetables among the dear people, and hens would be making their nests in China wagons all up and down this coast.

Now, do not take this paper as a criticism of our men in respect to the raising of vegetables, as, really, for many years, they have had to take no thought as to where their supply of greens was to come from, as the housewife had only to see that John came around regularly; but, after all, they do not realize how little time it takes from the evening chat on the street corner between sundown and dark, or in rising an hour or so earlier each morning, to make a corner of their lot or farm, where there is water for irrigation, to furnish an abundant supply for their use, or of the comfort and satisfac-

tion which any one of their wives will obtain in gathering them just when they need them. There is no comparison between them and the China wagon product, as we speak from experience, having for many years grown the most delightful vegetables on our place.

A Case in Point.—Last year a neighbor who has lived for many years on what is termed in this country a "dry ranch" begged us for a few acres of bottom land and water that he might raise vegetables on shares. This offer was gladly accepted, and after he had the ground thoroughly prepared we commenced to hunt seeds. Upon asking what he desired to put in the ground the reply was, anything we had. Well, it was a pleasure to watch him work, as he seemed delighted to have a chance to run water. He came some four miles, with lunch basket, often before sunrise, and fought the usual battle with cut-worms and squash bugs; but, after all, his "truck patch" was worth going to look at, and we, as well as his family, luxuriated in corn, beans, peas, cucumbers, melons, peppers, sweet potatoes, and the best of Irish potatoes, of which we have an abundance yet. If he could have obtained good seed for the latter the crop would have been immense, but they were not procurable. And all the time he seemed so happy to see things grow, which to the true gardener is the one inspiration and the key to success. A love for his work and the welfare of his loved ones in these added comforts "lightens labor."

Washington's Sago Palm.

A Washington dispatch says contemplated changes in the arrangements for holding the White House receptions this season have necessitated the transfer of a number of large plants, particularly palms, from the conservatory to the Pension building. They are grouped about the fountain in the center of the great court, which now looks like a section of East India jungle. Among the trees is a sago palm, once in the possession of George Washington. Although it is only about 10 feet high it is over 200 years old, and its great age is plainly shown by its appearance. Mr. Pfister, the White House gardener, has tried to get a complete history of this venerable relic, but has only succeeded in determining that it was presented to Washington by a wealthy merchant of Baltimore, whose name is not now known. It came from the island of Cuba, and was already an old tree when brought over by the merchant, who owned a vessel plying between Havana and Baltimore. The tree stood at Mount Vernon for many years, and again found its way to Baltimore, Washington having presented it to a lady living in that city. There it remained until about fifty years ago, when the last owner of it died. At the sale of the owner's estate the Washington palm was bought by the head gardener of the White House, and it has stood in the greenhouse there ever since. It is one of the most interesting relics of Washington, and bids fair to survive several generations to come. Several of the beautiful feathery leaves were accidentally broken off from its already thin crown in its removal, but this will probably not injure the tree to any serious extent.

THE VINEYARD.

Vine Pruning in Sacramento County.

By C. E. MACK at the Sacramento Farmers' Institute.

The First Summer.—During the first summer after planting a vineyard, I plow and cultivate the ground at intervals of two weeks during the summer, depending on capillary moisture rather than irrigation for three years, notwithstanding I have a steam pumping plant on the premises. The young vines receive considerable attention during the summer in the way of hand cultivation, for I will not allow the ground to bake around the tender plant. I let it grow nearly as it pleases the first year. Sometimes I suppress an unusually rampant cane, but I do it so rarely that I have practically no system on this point.

Winter Pruning.—As I approach the subject of pruning, I will say that no matter how thoroughly the foundation of a vineyard has been laid, or how congenial are all the surroundings, unless we practice a system of pruning that harmonizes with the known laws that govern the growth of the vine, considerable of the care that has been given it will have been lost. I usually begin about January 1st. The vines have shed their leaves and they are dormant.

Early or Late Pruning.—There is a theory of very ancient date, and as it has been and is still taken by some as a partial guide for the time of pruning, it may not be out of place to give it as briefly as possible. According to this theory, when the cold weather first checks the growth of the vine, it does not entirely stop the absorption of the food by the roots, consequently the vine becomes surcharged with sap, the liquid portions of which are partially given off by

evaporation through the bark and buds and the more solid portions are deposited throughout the entire length of the vine, so that each bud is supplied with its quota of food with which to commence vegetation anew in the spring. Now suppose a portion of the vine is cut away in the early fall, it is evident that that which remains has the whole root for its support, and it may receive all the strength that would have been diffused throughout the unpruned vein. The few remaining buds, of course, put forth in the spring much more vigorously and send out fruit-bearing wood in greater perfection than it is possible for unpruned vines to do. I have faith in this theory. According to it, if the vine be weak, prune as early as possible after it has shed its leaves, but if it is a robust grower and a shy bearer, prune late. I am not sure of anything, but I am inclined to think pruning at different times in the year hastens or retards the time of vintage.

Next year I shall experiment in this line. A gentleman at Florin, this county, has for years had the earliest Tokay grapes in the market. He prunes very early, I am credibly informed. The persistent regularity of the early fruition of his grapes certainly shows that his neighbors within a stone's throw of him have different soils, which is not apparent, or are not doing something he is doing, or their grapes would not ripen two weeks later than his.

The First Winter Pruning.—The young vine the first year may send out several canes of different lengths. When I prune I select the lowest cane, as a rule, and suppress all others. I cut the cane the desired length and tie it to a stake to await further treatment. When the second year's growth starts I suppress mercilessly all lateral growth except two buds, if weak, and three if strong for the future head. I pinch the terminal buds of the remaining canes when about a foot or so long in order to make the future trunk more stocky.

High or Low Vines.—Right here is a point of very great difference among growers as to the exact point to head the vine. Most of my vines were headed about a foot from the ground, as was then the local custom. I had no practical knowledge of the vine at that time. I did just what others were doing. Since then my experience has taught me that if I ever plant another vineyard of Tokay grapes I shall certainly head them higher than mine were started. I am cognizant of the fact that a low-pruned vine is nearer the heated earth, and the radiation of heat during the night would theoretically give it a much more uniform temperature than a high-headed vine, which is desirable in the ripening of table grapes, of which I write. On the other hand, a low-pruned vine is more liable to injury; you cannot till the soil so cheaply; it is much more liable to frost, the temperature being noticeably higher as you get above the earth, as I found out by observation last spring. In high-headed vines the bunches are above the ground so high that none of its dampness will cause them to decay.

A high-headed vine will admit of a little wider pruning than a lower headed one, thus enabling the light and sunshine to surround the grapes and cause them to assume a much better color. This is not theory unsubstantiated, for I have a half acre headed as I have related. When I speak of a high-headed vine I do not mean a tree-like vine, but a moderately high vine.

Later Pruning.—During the second year the vine will make considerable growth. I suppress all suckers, and have in mind that at the end of the year I desire to prune to a good, strong fork of four eyes. The vine is so tractable that this is a matter of no difficulty. The third year each of the two arms will send out several lateral canes, and perhaps head suckers will appear. Everything should be suppressed except that each arm of the fork of the preceding year should be allowed to carry two spurs of two eyes each. This is the principle of pruning.

How Many Spurs to the Vine?—As the vine increases in vigor and can carry more spurs, I add them at my discretion. Just how many spurs to leave has always been a matter of some doubt with me. Some vineyardists say add an arm or spur for each year of its growth. This is about what I do. But could I not leave more? What good rule can I rely on in this matter? On vines, say, 3 inches in diameter, I leave, say, six spurs, and I am rewarded with fifteen pounds of grapes. Six spurs of two eyes each are about the number of fruit buds the average man leaves; it is about the standard. On my arbor I have Tokay vines the same size in diameter as the one referred to, but trained so as to cover a large area, and I am sure I can at any time in season pick 100 pounds of grapes just as large, finely colored and beautiful as the ones referred to from the short-pruned vines. I experimented last year in this line by leaving a few more eyes than usual, and I am satisfied my vines can easily carry them. The pruner should have an ideal to follow. He should not make a cut without some good reason for doing it. All haphazard work should be eliminated and sound discretion used. How much better a vineyard pruned after the goblet system is over one pruned irregularly by careless or ignorant workmen.

Horizontal Training.—If there was not a close limit

to it, I would encourage horizontal pruning and training as much as possible. I have experimented and I am convinced that our vinifera vines would be more productive, particularly the Tokay, by this method. My observation has been that when vines are trained to grow straight up that that manner of treatment is far more conducive to wood growth than for fruit. I interpret Nature from the wild vines along the river banks that horizontal training is more fertile in results, for it is the spreading branches over the top of an alder that are fruitful and not the upright canes. The same result can be seen on my arbor.

Long Pruning.—In my experimental plot I have two varieties that I know of that must be long-pruned or they are not fruitful. I refer to the Emperor and Sabalskanski. I have five acres of Tokay grapes in one block which have been pruned longer than is customary, but not long-pruned. That block is absolutely free from black knot, the bunches are noticeably less compact than those grown on other blocks surrounding it. The treatment of that block, except the pruning, has been the same as that given to the contiguous blocks, but for some reason it presents two striking and desirable differences. This year I have left three eyes on all the spurs in the place of two. After the vine has put on, say, a foot or two of growth, I do a little work which in the end amounts to pruning. I remove all head and unfruitful growth, and partly shape my vine for subsequent training. This treatment I practiced last spring with satisfactory results. The only objection to it is that careless or ignorant workmen may remove canes needed to replace some dismembered spur or wanted for the addition of a new one.

Summer Pruning.—Summer pruning I do not practice. I did once, but I think I know better now. If I had the time to tenderly pick up each cane and pinch the terminal bud with my thumb and finger, as I do on very young vines, I think I would like it, but the practice of slashing indiscriminately with a large knife or sickle is bad. We know, or ought to know, that we should encourage leaf production, hence the slashing of canes from several feet down to 18 inches to 2 feet, as I have seen it done, will certainly deprive the fruit of the service of enough leaf surface for the elaboration of the sap. I know by experience this treatment will sometimes check the growth of the vine.

The variety I make a specialty of (Tokay) needs considerable shade, as it is in this region very susceptible to sunburn. I have my vineyard staked so that when the canes are tough enough to bend I take all of the current year's growth and place it around the stake, with all of the terminal buds pointing toward the southwest, and over that portion where the half-past 2 o'clock sun strikes it. It is not long before the tendrils are interwoven. I then cut the string that holds the vine in place. The effect is that the vine sags enough to form an umbrella for the grapes from the sun and rain. I have noticed that when the canes are bent there is a greater tendency for the vine to throw out stiff, upright secondary wood.

Tools.—In pruning, I cut all of my brush up in pieces as I go, about 8 inches long, and plow it in. I have a workman to go ahead of me with heavy hedge shears and cut the canes down to 1 foot or less. I follow with hand shears and saw. I consider the hand shears far superior to the long-handled shears for neat work. I use the Rizer shear. It is an imported shear from France. It is the costliest of any I know of and the best. This shear is very durable. The pair I have has pruned over 125 acres since coming into my possession. In order to keep one's shears in good trim for work the blade must be kept very thin and sharp.

TRACK AND FARM.

The Horses That are Wanted.

In the *Rural* of Feb. 26th we alluded to a very successful convention in the live stock interest which was held in Pendleton, Oregon. One of the most notable addresses delivered was that of F. J. Barry, of Chicago, who is described as one of the heaviest dealers in horses in the United States. The points he gives about breeding to meet certain demands and the styles of animals which meet those demands are of the greatest interest and value.

A Purpose in Breeding.—The subject before us is the American horse of to-day and the export demand. I will endeavor to show you the kind of a horse that the markets demand at present and the most salable kind for the export trade.

Every horse should be bred for a purpose, and to meet all the requirements of his class, with all the qualities that are required at the present time.

There are five distinct classes of horses and every horse for the market has to fill all the requirements of one of these classes, or he is condemned as a no-class horse, and is of but little value, and would not sell in our markets to-day for anything like the cost

of producing him; therefore, he would be considered a failure. He might be a very useful animal in the country, but would not sell in our markets for anything like what it costs to produce him. Small, rough and ordinary horses are animals of the past, and never will be of any great value again.

Characters of the Horses of To-day.—The export demand is divided into five different classes, of which I will give you an accurate description later on, and every horse must be an animal distinctly of his class, and the grades that are the most salable and profitable to produce for all export markets are the very same kind that are the most salable in all American markets. Therefore, a man in breeding horses for the export demand can make no mistake. The up-to-date horse of to-day is a very much different animal from what he was five years ago; therefore, the breeder of horses is not left to his own resources, as he has been in former times, but has a fixed type before him, demanded by the market, and to meet the American, as well as the export demand, he has to breed strictly for a purpose, and every horse must be one of the five different classes.

The Old and the New.—In former times, there were no classes of market horses. Every farmer could breed to his own fancy, and usually bred the kinds of horses he might have, regardless of what he might produce, and as every man had different ideas, all kinds of horses were bred and raised. In this way, a large percentage of the stock produced were too small and inferior and low-grade to ever make marketable and salable horses.

Before 1887, there was no regular market established in this country, to which a man could ship a load of horses and close them out immediately. Neither were there any fixed market values until that time. Men were left to agree on prices, and there were as many different ideas about the value of horses as there were different horses. Every man bred and raised horses according to his best judgment, and sold them whenever he could, or he would bring them to market, and they would sometimes stay at boarding stables until they nearly ate up their value in many cases. He would finally find a customer to whom he could sell them at some price, but very often he would ship them back home, thus making horse raising a very unsatisfactory and unprofitable business, although horses were high at that time.

About 1887, a market was established at the Union stock yards, Chicago, where all horses sold readily at market prices. This market increased and grew stronger until now it is the largest horse market in the world, and a man can ship a carload of horses and sell them as readily as cattle. Prices remained high until the panic of 1893, when all branches of business were depressed, prices became very unsatisfactory, and all kinds of properties were selling low, especially the horse.

The Wheel and the Trolley.—It has been said that there was an overproduction of horses previous to 1893, and we presume there was of the class that was produced, but at the same time there were not too many good horses produced. Had times remained good, they would have all been taken at firm prices, but while the supply was on hand, the demand decreased, an oversupply of horses was left, most of them unsalable, inferior and small, and during the depression from 1893 to 1897 many changes went on, and as a result of them, the whole horse problem was revolutionized. While the wheel came in, and it has been said took the place of the horse, we doubt very much if the wheel has decreased the value of the horse. While it has, in a small measure, taken the place of the small horse, and the interests brought about by it have improved streets and roads, it has been the means of increasing the demand for a larger and finer horse. I very much doubt if the wheel has depreciated the value of the horse.

It is believed by some that electricity will take the place of horses. I believe it never will. It is not practical. I believe this is an erroneous idea. Horses have been beasts of burden and pleasure ever since civilization began, and we believe they will remain so. While electricity has taken the place of street-car horses, there are many other uses that will make a demand for the horse in this period. Electricity has extended the street-car lines far into the suburbs, thus causing people to live farther from the center of the city, where they can secure cheaper homes, and many keep horses of their own who never kept them before. As all goods are delivered from the center of the city to the suburbs, where one horse was used for delivery wagons three years ago, five are used at the present time, thus making a large increase in the demand in this direction.

The Export Demand.—In the meantime, the export demand, which commenced in 1893, doubled in 1894, doubled again in 1895, and 35,000 horses were exported in 1896 and 50,000 in 1897. Thus, while the demand has decreased for one purpose, it has increased for many other purposes, being larger to-day than ever before. As the number of colts raised since 1893 has been comparatively small, our visible supply of American horses is reduced about 3,000,000, not only in numbers, but in quality. Good horses have become very scarce, and there will be a great shortage of the best kinds in a very few years. But

the great depression has all passed away, times are better, business is good, and there is a strong demand for all grades of horses, while our very choicest specimens of light harness and coach and heavy draft horses are worth nearly double to-day what they were two years ago. The medium classes have advanced in value considerably, while the lower grades still remain low.

The Classes of Horses Which are in Demand.—Now, I will give you a description of the five different classes, covering the export as well as the domestic demand.

Class No. 1.—Drivers and coaches which must be of good color, well bred, Wilkes preferred, from 15:3 to 16½ hands high, with fine heads and necks, plenty of bone and substance, short back, smooth hip, of good style and action, the last being the most important, good travelers. If they have some speed, all the better. This class has advanced very much in price and are worth very nearly double the price they sold at two years ago, ranging from \$100 to \$300. Some very rare specimens of this class have sold at auction in our Chicago market the first week in January for as high as \$450. When Hambletonian stallions with size to produce this class have been lacking, the French coach horse has been crossed with the trotting brood mares, with extremely favorable results, and it is the opinion of the best breeders and horsemen that we will have to cross our good trotting brood mares with the French coach horse in order to produce light harness horses large enough to meet the coach horse demand. It is believed that this cross breeding will produce a fixed type of coach horse that will possess size and quality, action and style, and still retain the road qualities required, as every light harness horse should be well bred in order to stand the wear and tear and hard work of pavements and the long drives of city service, and the more he partakes of the blood of the trotter the better.

Class No. 2.—A cab horse, rather blocky, weigh 1100 pounds and standing 15½ to 15¾ hands, smooth made, with bone and substance, fair traveler, price about \$75. These are very salable for many purposes, but they are always plentiful in our market, too plentiful to be profitable to raise. In breeding horses the breeder will always have some of this class. He will find a fair demand for all, although the price will never be high. This is the smallest class that ever should be bred, as there is no demand for anything smaller, except at ruinous prices.

Class No. 3.—A bus horse, blocky and smooth made, must shape himself well in harness, standing 15½ to 16 hands, with plenty of bone and substance, be a fair traveler, weighing from 1250 to 1400 pounds. These horses must be useful for general purposes as well as for omnibuses. The English use the blocky, lower-set ones for 'bussers,' while the larger ones are used for express and general purposes. This class of horses is in the strongest demand in all American and foreign markets and sell at from \$80 to \$125, and can be produced best by a Percheron horse crossed with a smaller mare that has some breeding and good style and action and road qualities.

Class No. 4.—The draft horse, which should weigh from 1500 to 1800 pounds, blocky made, heavy boned, with smooth finish, good quality and action, and first-class in every respect. The present price is from \$100 to \$250. The best specimens sell as high as \$300. This class is one of the most salable and will find ready sale in all domestic and foreign markets, and can be produced from the best heavy draft mares of good quality crossed with the best heavy draft horses of high quality, regardless of what breed he might be, as long as he possesses all the qualities of a draft horse.

Class No. 5.—The American trotter, which in all cases must be a high-bred trotting horse, with good bone and substance, high finish, good action and disposition, and the more speed he has the higher price he will bring, ranging from \$200 to \$5000, according to his quality, size and speed.

Values Assured.—All horses for export must be perfectly sound and without blemish. They are bringing at present higher prices than horses sold for any other market. Good horses will be held higher and higher for many years to come, as there is an increasing demand, as almost all countries of Europe have turned their attention to the American horses. They are giving such entire satisfaction that it seems to be the general impression that all countries in Europe will want American horses for many years to come, as breeding is reported to have ceased there, for they can buy American horses much cheaper than they can raise them. We believe there will be no let up to the export demand, and that it will increase all the time, and nothing can ever stop that demand, unless it should be extreme high prices and scarcity of good horses.

A Need of the Hour.—The greatest need of the present day is a fixed type of a coach horse or light harness horse. We believe the American trotter is the best blood to produce them. We also believe that, if the same care is taken to produce size, shape and quality that has been taken to produce the American trotter with extreme speed, a still higher class of horse can be produced from the blood of the

trotter by combining size and other qualities with his road qualities. In case of a shortage of Hambletonian stallions with size to produce this class, we would heartily recommend, to bridge over the present emergency, the French coach horse for the first cross, until you get the size and quality, and then breed back to the American trotter. The American trotter is the highest class of horse the world has ever produced within this century, and we have every reason to be proud of him, as he is purely an American product, and has made a world-wide reputation.

It should be our aim now to produce a fixed type of a coach horse, and when this is accomplished, we will have the most profitable and most salable horse the world has ever produced.

THE POULTRY YARD.

A Plea for Better Poultry.

By F. M. REED, at the University Farmers' Institute at Porterville.

Having bred thoroughbred poultry for over seven years in California and proved its value to the farmer by actual experience, I have, at the request of your committee, consented to write a few of the practical points of poultry culture.

California Conditions.—To begin with, let me say this paper is a plea for thoroughbred stock, and the farmer may as well have it as the fancier, if he will. Every farmer does himself a positive injustice if he does not take one or more poultry papers and read up on the subject and become familiar with what the hen will do for him and also familiar with the different breeds of fowls and what is being accomplished with them. In speaking of poultry papers I refer, of course, to the Pacific coast journals and California in particular, for the conditions under which Eastern writers refer to poultry culture are very much different than the West.

Summer Care.—Fruit and poultry culture go well together, and here, where there are so many alfalfa fields, fowls ought to do well. Much depends on green feed in the hot summer months, not only in the matter of economy, but also in the health of the fowls, for late in the summer, when the hen has passed through a long season of laying and her system is weakened, she should then be provided with proper food to strengthen her for the moult. Many farmers, after their hens have ceased to lay in the summer, turn them out on a dry back yard or a barren stubble feed with no green feed and with impure water, under which conditions they often run away late into the fall or fore part of winter with their moulting, and thus they go into another winter without proper nourishment and with a weakened system, and then people wonder why they don't get eggs in winter.

Winter Care.—Another element to make poultry successful is proper housing in winter. If eggs are expected in winter you will be a good deal more apt to get them if your fowls are warmly housed. In driving over the country how many good, comfortable poultry houses do you see? They are more rare than common. The idea is not to keep them confined in the houses, allow them their choice about it, but have them so they can get warmth by going to it if they want it. Good housing means economy in feeding. Does it not stand to reason that the hens that are coldly housed, or not housed at all, in such a winter as we have just had will require all the food they can get to withstand the cold, to say nothing of eggs?

Good Stock.—It is of the thoroughbred poultry that I wish particularly to speak. It costs no more to raise a good quality of stock, and it is a good deal more satisfactory and profitable in the end. Can you find a fruit grower who wants to fool away his time and money raising wild plums that he cannot sell when he can raise prunes or apricots that he can sell? Or will a grain farmer continue to sow, year after year, poor shriveled up grain because it is cheaper? The agricultural interests of California have reached that condition where the profit, if any, is to be made in the smaller industries. For some years past it has been nearly impossible for the large ranchers to cultivate their land with hired labor and find themselves at the end of the year with any profit for their work and capital invested. Notwithstanding this fact, the farmer being as a rule the most conservative of all citizens is very reluctant to try any new means of increasing his revenue, especially is he prone to look upon the humble hen as being any account for profit. Were he disposed to investigate the subject a little he would find that poultry is really one of the most important of American live stock.

Poultry Products.—A very much greater profit could be made if farmers as a class would take hold of poultry raising, supply the markets with first-class stock and eggs, combine as other producers have combined to make the best product bring the best price. For one thing, the farmers could cooperate with the poultry fanciers and demand that

our poultry be sold by the pound instead of by the dozen. In the East a big bird brings a big price, but here it is lumped in at the dozen rate and the dealer usually pays about half what it is worth. In the San Francisco markets to-day one cannot buy a good chicken for less than 75 cents, and the chances are that the raiser of that chicken was paid about 25 cents for it. Now this is all wrong, and it is a wrong that intelligent farmers, if they would pay more attention to the quality of their poultry, could soon help us right. The Eastern product outsells us in our own market, and no wonder, for as long as we continue to inbreed and send undersized, scrub poultry to the market so long may we expect to get little or nothing for it. A friend of mine told me that at Thanksgiving time he shipped a lot of graded cockerels from Plymouth Rock hens crossed with a large thoroughbred male. They were nearly all of one size and these brought in the San Francisco market \$9 per dozen, while hundreds of scrub lots of different mixed varieties and sizes went begging at half that price.

Local Experience.—Many farmers are beginning to realize that it pays to get the largest and very best of thoroughbred males for crossing with common stock, but it is still better to have all thoroughbreds. Several years ago I introduced the Silver Wyandotte in the locality where I lived. I purchased fine settings of eggs from the largest and most prolific stock I could find, paying \$12.50 for the eggs. From the the sixty-five eggs I hatched and raised forty-five chickens, twenty-one being pullets and twenty-four cockerels. In the fall I mated up two yards, having ten pullets in one and eleven in the other. I sold all the cockerels but two at from \$1 to \$5 each, according to quality, the majority selling at \$1.50 to \$2 each, people coming to my place and readily paying these prices for them. Thus for the cockerels alone I received more than three times as much as the first cost of the eggs and I had the pullets left for next year's breeding. The fact of this flock being of uniform color and size attracted passers-by and the majority who came to see them wanted to buy. This is only an evidence that if good stock is raised it can be sold, whether to market poultryman or fancier, it is alike attractive. One of the chief attractions of thoroughbred poultry is the handsome appearance of a uniform flock. I have never seen a fine flock of any breed of thoroughbreds running about a yard without its attracting the favorable mention of passers-by, whether they knew anything about chickens or not. Considering the ornamental features, the size and laying qualities of thoroughbreds, why is it that the great bulk of those keeping poultry are still content with a heterogeneous flock of barnyard mongrels whose every size and color are anything but satisfactory?

The Question of Breeds.—What breed to take up is a question with many, and in answer will say: Whatever breed of fowls you fancy and are attracted to you will most likely do the best with, always remembering that *care is everything*. In this State the Plymouth Rock seems to lead in popularity and for no particular reason, for there are others far more handsome and fully as good layers. Before selecting a breed the conditions should first be considered. If an orchardist wishes poultry to make away with the different insects and eggs alone are the main objects, range ample, with no near neighbors for his fowls to bother, then the nervous, flighty Mediterranean class, such as Leghorns, Minorcas or Spanish, are what you want. Where broilers are to be made the main object, the Plymouth Rock and Wyandotte fill the bill, with the preference in favor of the buff and white varieties. It may not be known to all that there are three varieties of Plymouth Rocks, the barred, the white and the buff; and five varieties of Wyandottes, the silver, golden, black, white and buff. The barred Plymouth Rock, and the silver, golden and black Wyandotte have a black pin feather which at certain stages of their growth make their carcass undesirable for the market, while the white and buff varieties have no black pin feathers and their plump golden yellow carcass is always ready for market. The buff Plymouth Rock or the buff Wyandotte come as near to being an all round, practical farmers' fowl as any breeds in existence, it being proven that they will lay equal to a Leghorn besides having the desirable table qualities above mentioned. For town or city use where neighbors are to be considered and only a limited space can be had the Asiatic class will probably do best, as they stand confinement better, and the black Langshans and buff Cochins are considered among the best winter layers and eggs in the winter are an object when 40 and 50 cents per dozen are paid in San Francisco and other markets.

The interest in thoroughbred poultry is rapidly increasing in many parts of our State. Five large and successful poultry shows have been held this winter, viz: San Jose, where over 700 birds were shown; Fresno, over 300 birds; Riverside, 500 or 600; Los Angeles, about 500; and at Sacramento nearly 600 fowls, 500 pigeons and 100 dogs of all varieties were shown. All this goes to show that there is a field for the grower of fine poultry, and the farmer who takes the advantage of the opportunity will be the one who increases his resources, and consequently his income.

THE VETERINARIAN.

Tuberculosis in Oregon.

By JAMES WITTHYCOMBE, State Veterinarian of Oregon.

Tuberculosis, as is well known, is the bane of the human family. Its victims are numbered by the tens of thousands annually, and yet this subject receives but a passing consideration at the hands of the general public. So extensive is this disease in the human family that autopsies in portions of large cities show lesions of this malady in one person to every three that die, and the disease is directly responsible for one-seventh of the mortality in the human family. Tuberculosis in our domestic animals is identical with tuberculosis or consumption in man, and is transmissible from one to the other.

Susceptibility of the Cow.—There is but slight doubt that some of our domestic animals, especially the cow, are responsible for the propagation of the disease. The cow has been designated as the "wet nurse of consumption." This noble creature evidently merits the title, but who is to blame for it? This condition is largely due to environments which are under the control of the owner; hence it is an easy matter to place the responsibility. Among our domestic animals the cow is probably the most susceptible to tuberculosis, especially the dairy cow, as during lactation the large yield of milk depletes the system and lowers the vitality of the animal, thereby reducing her disease-resisting powers to the minimum. During this period in the life of the cow large tissue changes are hourly and daily taking place, hence the importance of furnishing her with an abundance of pure air for the proper oxidation of the blood. Since pure air is an indispensable agent in the maintenance of a healthful condition of the cow, the importance of furnishing her with well ventilated quarters is apparent, for without this she is not only a menace to the health of the herd, but also to the consumers of her daily milkings.

Environment.—After an experience with tuberculosis, extending through several years, the writer has arrived at the conclusion that fully 90 per cent of tuberculosis in dairy cows is directly caused from faultily constructed stables, accompanied with bad sanitary regulations. Whenever a herd of dairy cows are found that have been confined during a considerable portion of the time in a dark, poorly ventilated stable, a tuberculin test will almost invariably reveal tuberculosis in that herd; while, on the other hand, herds kept in barns, properly ventilated and well lighted, are seldom found to be diseased.

Thus it will be seen that vitiated air is a potent factor in spreading the diseases among cows, and the writer firmly believes that the same cause is largely responsible for the ravages of consumption in the human family. It is a well-known fact that the tubercle bacillus cannot long withstand pure air and sunlight, hence dwellings for human beings, as well as barns for domestic animals, should be constructed so as to admit as much pure air and light as possible for the comfort and health of the occupants.

The high death rate from consumption in our large cities is mainly due to two causes—first, from overcrowding in dark, poorly ventilated tenement flats, and, second, from using milk from tuberculosis cows.

The Pacific Coast.—The percentage of diseased cows in some of the dairies near the large cities of the East is simply appalling, oftentimes ranging from 75 to 100 per cent. Those cows are kept in barns; they were never permitted to take exercise, and are deprived of all natural light. This class of dairies furnishes the milk to the poorer class, and it is among these that we find the highest percentage of death rate from tuberculosis.

In the mild climate of this State there is no excuse for a dark and practically air-tight cow barn, although many of our dairymen, either through ignorance or penuriousness, will persist in keeping cows in such places. The humid climate of western Oregon is favorable to tubercle bacillus, hence the supreme importance of surrounding our cows with proper hygienic conditions.

Cattle kept in the open air are rarely, if ever, found to be affected with tuberculosis; and we have no record of a bovine tuberculosis among the range stock of this State.

In Oregon.—The dairy herds of Oregon are probably freer from tuberculosis than the dairy herds of any other State in the Union. Oregon is the first State that undertook the task of stamping out the disease from among the domestic animals within her borders, and is also the first State to enact a law empowering the use of tuberculin as a diagnostic agent, which agent at the present time is recognized by the veterinary profession in every nation of the civilized world.

Men who have made a close study of tuberculosis in man and the lower animals are generally of the opinion that, with the observance of scientific, sanitary principles in the construction of our dwellings and barns, ravages of tuberculosis will be considered mitigated.

THE HOME CIRCLE.

Children of the Poor.

O winter wind, indulgent blow,
O sun, be warm and bright,
Thou kindly stars keep watch below
Through all the lonely night;
Let not thy charge too much endure
Of suffering, O fate,
These little children of the poor
Within the city gate.

They are the helpless ones who feel
The wickedness of man,
Who dwell beneath the iron heel
Of thy industrial plan;
Be merciful and move the heart
Of love and charity.
Till tears in eyes long dry shall start
Their wretchedness to see.

Give them each day their daily bread,
A fireside for their play,
Round which a soft good night is said
At close of darkest day;
And if perchance the home be bare
Of all save want and sin,
Grant, grant, the faithless scornful prayer—
That joy may enter in.

O wealth, O fame, are ye not vain
While innocence still lies
Upon a bed of burning pain
With hunger in its eyes?
Bleed, selfish heart! O pity, spare
Proud wisdom to be kind!
These little children of the poor
Hath not the Christ defined!

For peace are courts and camps maintained.
For pride asylums rise;
Humanity's great heart is gained
When human freedom dies.
Alas, not here the poor are found,
Wards of a noble state;
Rather in rags they wander round,
Unconscious, by love's gate.

—Charles W. Stevenson.

"Chink."

A way back in the '60's, during the infancy of the cattle interests of Kansas, an out-and-out New England boy came to the State, looking for a suitable location to engage in the new industry.

Finding a small ranch for sale on the Little Blue, Chink Morgan invested his money and settled himself to business.

Erastus Cummings, his nearest neighbor and whose ranch lay eight miles below, was a pioneer in the business, and it was not to be wondered at that Chink cultivated his acquaintance, for the Yankee boy was determined to succeed, and was not above obtaining all the information relating to the breeding and ranging of cattle that could be had.

As time passed and the years had added to their number by three, the prospering young ranchman found it more convenient than ever to drop in at Cummings', for a daughter that had been East attending school was at home and proved an excellent hostess.

The friendship that sprang up between these young people grew serious at once, so far as Chink was concerned, and at the end of twelve months, encouraged by the fair Martha, the young man broached the subject of marriage to pater familias. Imagine his disgust, when the esteemed Erastus replied: "No, sir! I don't give one-half of fifty-two hundred cattle and their certain increase, for an even three hundred; not very much. You must remember, young man," he continued, "that Martha and the boy are all the family I have, and that some day they will share equally in my lands and herds. Under these conditions, I cannot consider your proposition. You must manage to make a better showing before again aspiring to the hand of my daughter."

The short conversation taught Chink that his wooing was in vain, and at the first opportunity he spoke to Martha concerning the subject, saying: "I sometimes think, Martha, that it will be necessary to poison all but six hundred head of your father's cattle or make up my mind to live and die a bachelor."

"What a foolish fellow," answered Martha. "Are you not certain of having a large herd in time, if you are as fortunate in the future as you have been during the four years since you came to the State? I never want to hear you speak in that manner again."

"You are unusually bright, Martha," returned Chink, "but how can you or any one else solve a problem such as

this? For myself, I see no way of making a herd of three hundred cattle increase as rapidly as a herd of fifty-two hundred. If you are able to enlighten me, be kind enough to produce your figures."

"You ask too much," answered Martha. "You should not look at the subject in so serious a manner, but remember that I love you just as well as though you owned ten times your number of cattle, and am willing to wait until you have bettered your condition. And besides, father may change his mind after a time, especially if he learns that we are not to be discouraged by his methods of delay."

"I dare say that you are correct in your views," Martha, replied Chink, "but it seems like asking a man to purchase his wife, and that is a form of speculation I care very little for, especially at present. I might consider a proposition to purchase a limited number of cattle, providing they were acclimated, or even a saddle-pony; but as to buying a wife! The very thought leaves a bad taste in my mouth."

"Your symptoms grow alarming," answered Martha with a laugh. "Judging from your appearance, I should not class you with dyspeptics, or think of you as a sufferer from any of those disorders that derange the stomach or coat the tongue." And the girl smiled as she gazed at the manly form of her lover.

Chink detected a look of deep interest in his sweetheart's eyes, and realized that she was far more hopeful of the future than himself. Taking both her hands in his strong, brown ones, he soberly kissed his betrothed and said: "You're a brave girl, Martha. I am proud of so hopeful a sweetheart, and shall profit by your words. You have bravely said that we could wait, and that must suffice. So good-bye."

During the early winter a destructive prairie fire swept over that portion of Kansas, burning everything in its path that was not well protected by fire-guards. The winter range was wholly destroyed, together with many stack-yards of hay. To the majority of ranchmen the loss was disastrous, but not so with Chink, who, though greatly inconvenienced by the loss of his range, was fortunate in saving his precious stacks of hay. Being a prudent man through inheritance and from the early schooling received upon a sterile Vermont farm, the young Yankee had a fine lot of forage, and it was well stacked in a sheltered bend of the river not far below his corrals. Extra precaution had been adopted to prevent loss from sudden and unexpected fires by burning wide fire-guards around the hay-yard and about the house and sheds. When the fire was discovered away off to the southwest, Chink dispatched one of his men with orders to drive in the herd of cattle feeding peacefully on the opposite side of the river and directly in the line of that rolling, seething mass of flame. With the other he hastened to the last row of fire-guards and began back-firing. Though the progress made at first was slow, every rod gained meant that much protection, and when the head fire came rolling up the lines had burned nearly a hundred rods from the river. Like a writhing monster, the cloud of flame and smoke burst upon the feebly burning lines of back fire, carrying them far into the air and up over the strip of freshly burned sward in a frantic effort to carry on its work of destruction. But the fire-guards had performed their work so satisfactorily that the great mass of flaming billows separated at either side of the ranch and passed swiftly on without harm to hay or buildings.

This bit of good luck on Chink's part, as Mr. Cummings insisted upon calling his neighbor's escape, enabled the young ranchman to winter his own herd in fine shape and made it possible to care for a fine bunch of cows belonging to a less fortunate neighbor, one-half of them becoming his property when grass came the following spring. This addition to his herd and the season's increase swelled the number of cattle in Chink's herd to nearly 600 head, and brought to mind the cheering words of his sweetheart.

On the other hand, Mr. Cummings was not so "lucky," as he was pleased to term it, for he neglected burning fire-guards about his hay yards and could only stand idly by and see them go up in smoke. As if that were not sufficient misfortune, his cattle, which he had removed to another range, drifted badly and many were never recovered, while a great number of the weaker ones died during that trying period known to ranchmen as the time "between hay and grass."

As the building up of a herd was a comparatively easy task in those days, when the owner possessed the means and had a reasonable "run of luck," so the destruction of a fine bunch was equally certain when fire and starvation each had an inning.

At the next annual round-up it was quickly learned that Chink Morgan had more than half the number of cattle possessed by his neighbor Cummings, and this information led to a second business trip to the ranch located "eight miles farther down the river."

When approached by Chink with a request for the hand of Martha in marriage, Mr. Cummings admitted the folly of his former answer, and to do the "square thing" made his future son-in-law an equal partner in his ranch and cattle, declaring that the Yankee boy had taught him the greatest lesson of his life.—The Western Horseman.

Gems of Thought.

Human life is like a game at dice; where we ought not to throw for what is most commodious to us, but to be content with our casts, let them be never so unfortunate.—Plato.

It is difficult to act a part long; for where truth is not at the bottom, Nature will always be endeavoring to return; and will peep out and betray itself one time or other.—Dr. South.

Be pure, be strong, be wise, be independent. . . . Let the world go, if it is necessary that the world should go. Serve the world, but do not be the servant of the world. Make the world your servant by helping the world in every way in which you can minister to its life. Be brave, be strong.—Phillips Brooks.

Hope is a vigorous principle; it is furnished with light and heat to advise and execute. It sets the head and heart to work and animates a man to do his utmost. And thus by perpetually pushing and assurance, it puts a difficulty out of countenance, and makes a seeming impossibility give way.—Jeremy Collier.

The gentleman . . . is the man who is master of himself, who respects himself and makes others respect him. The essence of gentlemanliness is self rule, the sovereignty of the soul. . . . He is the free man, the man who is stronger than things, and believes in personality as superior to all the accessory attributes of fortune.—Amiel's Journal.

Many persons fret themselves greatly over, not their own shortcomings, but those of their neighbors, real or imaginary, as may be. They are annoyed because they see courses of conduct which do not commend themselves to their judgment; and they are all the while in some entanglement of fret or worry, because other persons do this or don't do that. Surely, nothing could be more idle. Each must, for the most part, live his own life; and, until motives are visible and can be unerringly interpreted, they should not be criticised adversely. Life should be held to a finer strain than one of fret and jar. Lillian Whiting.

Fashion Notes.

Moonlight gray is a beautiful opaline tint of that very fashionable color.

One of the coming shapes in spring wraps is made like a half handkerchief of colored velvet and covered with Venetian lace. It is edged with fur in a frill of chiffon and supplied with the fashionable high collar.

All the new coats and casaques that one sees now are almost tight fitting. Even the blouses are made after the fashion of corsages. They are less vague, are generally made in plaits, either lengthwise or horizontal, mingled with insertion or lace or embroidery, and the sleeves are quite flat, except for a little bouffant on the shoulders or epaulettes.

A novel trimming for a velvet gown is Valenciennes lace insertion over white satin, outlined on either edge with imitation pearls.

The black satin blouse heads the list of stylish and useful waists. It is tucked up and down or around, according to the figure it adorns, and with a satin belt embroidered with jewels the effect is charming.

Heliotrope, in all the shades imaginable, is in evidence among the new colors for spring.

Among the new materials this spring are several weaves of crepon, which are not intended for anything but mourning wear. They look as though part were made of crape, and then of shirrings of silk and wool. They are also to be seen with a sort of blistered surface, resembling matelasse or quilting. They are always of a deep black, not a blue black, and wear well, but are among the expensive materials. However, as they do not require much trimming, they are not so expensive as might be thought.

Black gowns in cloth and various other black materials are fashionable.

Among the latest embroideries are zouave and bolero fronts, with long panels reaching almost to the hem of the skirt.

Hats with willow brims and white satin crowns are promised as a coming fashion. White violets are much used for trimming, and the whole tendency seems to be toward the use of an excess of white in the new millinery.

Fine India cashmere, or drap d'ete, is an ideal material for young girls' dresses, according to the New York Evening Post. Indeed, any woman under thirty may wear cashmere. We are speaking now of evening dress, for, of course, women of any age wear it in dark shades at other times. Two of the most charming toilettes seen recently were worn by beautiful sisters opposite in type from each other. One dress was of creamy white India cashmere, the blouse and sleeves delicately embroidered in shaded pink and green. The other young girl wore a pale blue cashmere, very sparsely but most effectively ornamented with palest blue and delicate pink silk embroideries. Straw-colored satin, trimmed on the bodice with blonde lace, and a cluster of natural red roses, formed a striking gown worn by the mother of these lovely girls. Dark hair and eyes are supposed when such a toilette as this is chosen, but the wearer in this instance was a blonde of the purest type, and most charming she looked in her pale yellow gown.

More high-necked dinner gowns have been worn this winter than for many seasons past, and even for very grand dinners and for debutantes the half-low bodice is finished with a guimpe Russe of transparent textile laid in shirrings, plaits or tucks.

More Than He Expected.

Granite State Evaporator Co.
Alda, Neb., June 29, 1897.
Gentlemen:—I am well pleased with the Cooker I purchased of you last fall, and find it to be more than I expected for the money. It takes less fuel than any other I have ever seen. I think if more farmers in this part of the country cooked their hog feed, we would have less of what is called Hog Cholera when we commence to feed green corn in the fall.
Yours truly,
S. W. SPENCER.
25 gallon, \$12; 50 gallon, \$17; 100 gallon, \$24.
GRANITE STATE EVAPORATOR CO., 6 Temple Court, N. Y. City.



The Universal Tragedy.

From the hand of the Master
The world rolled out into space,
And He said, "It shall be
The burial ground of a race;
Fierce warriors
Alone shall rise up on its face."

The word was said truly—
The world is a battlefield all;
All life is in arms
And responds to the terrible call.
Each atom
Like a hero must conquer or fall.

From man to the microbe
We live by a war upon life;
The weak must go down,
And the aged must yield in the strife—
A moment
Each one may be lord of the knife.

The very diseases
Are legions of life to be fed;
They only can live
If others go down to the dead.
Their armies,
Like ours, are fighting for bread.

At dawn of the ages
The pitiless battle began;
It will last while the world
Gives birth to a mote or a man,
Till the sun-star
Has shrunk to its ultimate span.

Then Earth, like Neptune,
Will drift into silence for aye;
The seas will be ice,
And the land will be frozen away;
The wind storms
Will blow not by night nor by day.

And the victor and vanquished,
Together forever as one,
Will grieve not nor boast
At the valorous deeds that were done
By the living
In the days of the reign of the sun.

—H. F. Thurston.

Curious Facts.

In a chicken-picking contest held at White Pigeon, Mich., one woman working alone beat two men working together, picking 102 fowls in the forenoon to the men's 101.

The most powerful guns now made fire a shot from twelve to thirteen miles, and Krupp's great 130-ton steel gun hurled a shot weighing 2600 pounds a few yards over fifteen miles.

In order to clear the title to her house on the south side of Eighty-third street, New York, the Countess de Brazza paid \$100 for 36 square inches of land belonging to adjoining property but on which the house encroached.

The authorities of South Africa are destroying locusts by catching a few, inoculating them with toxin and turning them loose among their fellows, from which a locust pestilence ensues. That is a trick which Pharaoh of North Africa never caught on to.

The price of game in France is alleged to depend principally upon the state of the moon. When the moon is dark, and poachers cannot see to set their snares at night, game is scarce; when the moon is full there is plenty of light and the poachers get lots of game.

The thread on the cocoon of the silk worm is not wound around and around, as might be supposed, but irregularly here and there, as the worm moved his head to and fro within its self-made house. Many yards of thread may sometimes be unwound from the cocoon without turning it over at all.

Popular Science.

It is estimated that the nerves, with branches and minute ramifications connecting with the brain, exceed 10,000,000.

It is said that in the sandy deserts of Arabia whirling winds sometimes excavate pits 200 feet in depth, and extending down to the harder stratum on which the great bed of sand rests.

It has been demonstrated that while there is no especial difficulty in using petroleum as a fuel for locomotives, there would be trouble in obtaining a supply of the fuel. It has been estimated that the entire petroleum supply of the country would not furnish fuel enough for the use of the locomotives employed on the Pennsylvania and New York Central systems alone.

The fanciful notion which men used sometimes to entertain that the earth is, in some sense, a living thing, would

probably have derived support from the recent observations of Prof. John Milne and others on the shivers and quivers that frequently run through its rocky frame, but escape notice, except when watched for with specially constructed and exceedingly delicate apparatus. Prof. Milne reports that apparatus of this kind has now been mounted in Canada, British Columbia, the United States, South Africa, New Zealand, Java, India and Argentina, as well as in England and at various places on the continent of Europe.

Some Old Recipes.

A New England gentlewoman early in the century wrote the following quaint recipes in her notebook, in a beautifully clear, even hand:

A friend to the ladies would take this opportunity to advise them to supply their toilets with the following valuable articles, viz.:

First—Self-knowledge, a mirror showing the form in the most perfect light.

Second—Innocence, a white paint, beautiful, but easily soiled, and requiring continual care to preserve its luster.

Third—Modesty, a rouge giving a delightful bloom to the cheeks.

Fourth—Contentment, an infallible smoother of wrinkles.

Fifth—Truth, a salve rendering the lips soft and delicious.

Sixth—Gentleness, a cordial imparting sweetness to the voice.

Seventh—Good humor, a universal beautifier.

A lady who possesses all these toilet articles must certainly be well equipped. They are probably as efficacious now as they were nearly a hundred years ago. Doubtless they were composed and presented to the lady in question by some gallant beau—an observer of, as well as "a friend to," the ladies.

DOMESTIC ECONOMY.

Domestic Hints.

PECAN NUT CANDY.—Two cups of molasses, two cups of sugar, one cup of butter; add as many pecans as possible, let them boil with the candy; this gives a delicious flavor. Test by dropping in cold water.

OYSTER OMELET.—Stew one pint of oysters in own liquid, add three tablespoonfuls of butter and season. Remove oysters and chop, then return them to the sauce and keep all hot. Make an omelet of four well-beaten eggs and two tablespoonfuls of cream, fry carefully, remove to the inevitable hot dish and pour sauce over it.

CHOCOLATE CANDY.—Two cups of granulated sugar, one cup of rich milk, butter the size of a walnut, one-quarter of a cake of chocolate; boil for twenty minutes, stirring constantly. Beat for five minutes after taking from the stove. Do not let it cook too long. Cut into squares just before it is cool.

SNOWBALLS.—Cream one-half of a cupful of butter, add one cupful of sugar and cream again. Add alternately one-half of a cupful of milk and two heaping cupfuls of flour. Add three teaspoonfuls of baking powder, stir in lightly the stiffly beaten whites of four eggs, turn into buttered cups and steam for half an hour. Serve with strawberry sauce.

JELLY ROLL.—One cupful of sugar, one of flour, three eggs and one teaspoonful of baking powder; beat well and spread on a long, narrow baking tin; bake quickly and turn out on a cloth, spread with jelly and roll up. This is a very favorite cake for children's parties. Its excellence, of course, depends on the quality of the jelly.

WHITE SPONGE CAKE.—Stir together one and one-half tumbler of sugar, with one tumbler of flour and one teaspoonful of cream tartar. When these are thoroughly mixed, add the whites of ten eggs beaten to a stiff froth. Line a baking pan with buttered paper, pour in the dough and bake in a moderate oven. Be careful not to jar the

cake while baking, as it will cause it to fall.

Hints to Housekeepers.

In mending gloves use fine cotton thread instead of silk, which is apt to cut the kid.

A teaspoonful of vanilla added to a cranberry pie is said to give the flavor of cherries.

During cold weather use alcohol to wash windows. This prevents the windows from freezing, and gives them a fine polish.

If you want to have chopped jelly for garnished dishes, remember to chop or cut with a knife, which has been dipped in ice water, and have the jelly on paper, which has also been dipped in water.

Nuts are now so extensively used in cooking that large quantities are kept in cold storage, and it has been said that walnuts and pecan nuts, unlike anything else, are improved rather than deteriorated by this process of keeping.

Oatmeal water has a very softening effect on the skin, and many persons use this in preference to soft water. It is made as follows: Boil five ounces of oatmeal in one and one-half pints of water for about forty minutes, then strain off the liquid and use.

A simple way to mend china that is not intended for use, and will not be washed with hot water and soap, is with fine carriage varnish. An easily made cement for china is also prepared from the white of an egg, thickened with unslaked powdered lime. It will not bear hot water.

In cases of nausea, when nothing hardly can be kept down, ice dipped in lightly frothed white of egg is a great support. Another very nice thing is tea made with new milk precisely as

you would make it with boiling water. Again, a teaspoonful of cream beaten up in a tablespoonful of champagne is said to remain down when nothing else can be kept on the stomach.

Silk stockings should be washed and rinsed in lukewarm water and wrung between two towels. Woolen and silk underwear should be washed in warm soapsuds, to which a little ammonia has been added. The silk garment may soak for a quarter of an hour in this preparation before being rubbed between the fingers. Rinse twice through clear, tepid water, and hang to dry with great care, pulling out all wrinkles. Iron under a cloth before quite dry.

A cake of magnesia is a good friend to the economical woman in these days of many light frocks. Rub the soiled spots on both sides of the goods when the dress or waistcoat is taken off, and after airing hang away with the magnesia still there. When the dress is wanted again dust the magnesia off lightly and it will be found to have carried away part of the soil and to hide the rest. A light dress may thus be kept immaculate in appearance several days after it would otherwise have to go to the cleaner.

It's worth your while to send for a FREE sample of



Tuttle's Elixir.

It cures curbs, colic, sprains, lameness, etc., in a horse.

Tuttle's Family Elixir cures rheumatism, bruises, etc. Send three 2-cent stamps for postage only.

DR. S. A. TUTTLE, 27 Beverly St., Boston.

Don't Be Careless.

Don't guess what your cows are doing, but KNOW.
Don't think your cows are all right when you can KNOW.
Don't use an inaccurate Babcock Test.
Don't let your creamery man skin you; keep a check on him.
Send to us for a first-class ten-dollar

No-Tin Babcock Test

and let your creamery man know that you have it. Let six of you club together and get six machines for fifty dollars. They are well made—regular life lasters.

Elgin Mfg. Co., Elgin, Ill.

YOU CAN MAKE MONEY

BY USING The Best Separator on the Market
THE IMPROVED UNITED STATES SEPARATOR

Send for catalogues filled with testimonials.

It excels all others in close skimming, ease of running and cleaning, durability, etc

COMUS, MD., Apr. 24, 1897.

I thought I could not afford to pay \$125 for an Improved U. S., but one day's trial convinced me I could. I sell my butter for 25 cents, and the gain will pay for the machine in 180 days. It has cost me only 30 cents for repairs in two years. I have turned the Sharples and DeLaval, and my No. 5 turns at least one-third easier than either.

T. B. JOHNSON.

DAVENPORT, IOWA, July 17, 1897.

I have had experience with other separators, and can safely say that for light running and perfect skimming and durability, the Improved U. S. leads them all.

JESSIE ARMIL.

BLOOMING PRAIRIE, MINN., July 15, 1897.

In one year the Improved U. S. has more than paid for itself in extra amount of butter gained. I concluded to buy it after looking over the "Baby" and Sharples' "Safety," and think it much the best machine in every respect.

N. C. WARTENBERG.

MORRIS RANCH, TEXAS, September 24, 1897.

I am delighted with the Improved U. S. It is a thorough skimmer. I have never been able to find a particle of cream on the separated milk. It runs very easily, and is positively no more trouble to wash than half a dozen milk-pans. I thoroughly investigated the matter before buying, and found that the U. S. is undoubtedly the best machine on the market.

MRS. GEORGE MORRIS.

CLEMSON COLLEGE, S. C., Nov. 15, 1897.

I send you by mail the diploma awarded the Improved U. S. at our State Fair for "Best Cream Separator in operation."

J. W. HART, South Carolina Exp. Station.

Catalogues free on application.

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

METEOROLOGICAL.

Latest Conclusions on Frost Fighting at Riverside.

We have kept our readers well informed upon the California experiments in frost fighting because the question interests not only citrus fruit growers, but growers of deciduous fruits, vineyardists and others. The Riverside Horticultural Club has had a special committee, consisting of Messrs. J. H. Reed, E. W. Holmes, E. L. Koethen, E. A. Zumbro and J. H. Martin, at work ever since December in experimentation and observation, and they have submitted their conclusions as follows:

First—There is no doubt whatever that the temperature of our orchards may be materially raised by the use of dry heat.

Second—The radiation of the earth's heat can be very considerably lessened by moist smudges, when these are started early enough and are properly managed.

Third—The possibility of raising the dew point on one of the dry, cold nights peculiar to our climate, sufficiently to prevent damage, by means of steam producing apparatus, seems impracticable.

Fourth—Fruit and trees can undoubtedly be saved, even in the coldest sections, by covering them with cloth or matting; but the expense involved makes this method impossible on the part of the ordinary grower.

Fifth—It is found that the temperature in an old seedling grove, or where tall windbreaks afford to smaller trees fruit trees a like protection, is almost invariably one or two degrees higher than in exposed orchards in the immediate neighborhood. This fact seems to thoroughly upset the theory strongly held by many intelligent growers that the tall, well-located windbreak is a disadvantage, the contrary seeming to be the truth.

Sixth—It is found that the temperature 20 feet above the ground is from one to two degrees higher than at the surface, and that, as a rule, when the cold is severe enough to injure the ripest fruit, 50 feet from the ground there is almost invariably a temperature above the freezing point of water. Prof. Zumbro, who has given especial attention to this matter, finds that at the height of 50 feet the temperature is from five to ten degrees higher than at the surface, where the air is not in motion. Where there is any very considerable breeze it varies but little.

Seventh—Our conclusion is that, all things considered, the coal baskets, sufficiently numerous, will prove the most satisfactory and effective means of warming the orchards yet made use of. It is true, the oil pots make a far hotter fire, and are neither expensive nor difficult to manage; but the deposit of lamp black upon tree and fruit resulting from their use condemns this system for general use.

Smudging.—As to the value of smudging, the members of your committee are not so well agreed. Because of less sharply defined results, we find it more difficult to come to definite—at least uniform—conclusions. But, under certain conditions, we are convinced that, properly used, it may be made a valuable means of protection. We think this especially true in localities where the temperature never falls but little below the danger point, and where there are considerable solid areas of young orchards exposed. Here it will work well if the protection is made general. But where the danger is considerable, we think it wise to be prepared to use dry heat even where in connection with the smudge. The benefit from smudging is probably as much from its protecting fruit and trees from the sudden rays of the morning sun after a freezing night as from modifying temperature during the time of danger.

Running Water.—Experience demonstrates that flooding or running water in connection with dry heat or smudging is a valuable adjunct. One of the committee, who has been testing this matter carefully for three years, is dis-

posed to think that the direct benefit from running water is overestimated by the majority of growers. Its value in putting orchards in condition to withstand quite severe weather is unquestioned, but the committee are inclined to think that entire dependence upon this method will occasionally result in serious loss to those who trust to this means alone.

Coal Burners.—As to the number of baskets needed when coal is used, we find the most decided and satisfactory results have been gained where from twenty to fifty coal fires have been used to each acre. If intelligently and energetically used, this plan will never fail, except when the mercury drops below 24° for a long while, and even then it is believed the larger portion of a crop may be saved if anything like a general use of such fires be secured. The smaller number of fires named has in numerous cases, and even when a man was working alone, secured a rise of 3° to 5°, and saved a crop. Can it be doubted that fifty fires per acre used in every orchard would save both trees and crop on the coldest night ever known in California's history?

Cost and Profit.—To equip an orchard with fifty baskets to the acre means an outlay of only a little over \$5. The fuel to run them one night costs from \$2.50 to \$3. If a crop of Navelis upon it is worth \$400, it will pay well to spend in fuel and labor \$4 per night, or 1 per cent of the value of the crop, to insure its safety. In the orange region of southern California it is not usual to have more than two or three nights in a season when the fruit is in danger. But even if, as in the present season, the period of cold is more extended, will it not pay to expend at least as much as one pays for his irrigating water to secure the safe maturing of a crop it has cost him a year's labor and heavy expense to produce?

The conclusion is obvious that we have only to provide for the insurance of this sort of property exactly as we would in the case of that liable to destruction by fire, to be enabled to follow the business of orange and lemon growing with the certainty of having perfect fruit to market at the season's end.

While the practicability of protecting our orchards from frost seems established, the problem of the most economical and scientific means of accomplishing this is probably yet to be solved. However well the wire baskets may serve us now, there doubtless will be improved methods for burning coal, and even other material may be found that will serve the purpose better, and while wet straw seems at present to be the most available for smudges, doubtless, when the need is made known, chemists will find some vapor-producing material more compact, efficient and economical.

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Caustic
Balsam

A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular. THE LAWRENCE-WILLIAMS CO., Cleveland O.

MAN'S
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often suffers unnecessarily for lack of a proper remedy for his ailments. Relieve his suffering and make him sound by using

QUINN'S OINTMENT

It cures curbs, splints, sprains, wind puffs and all blemishes—makes clean, sound legs. Price \$1.50. Smaller size 50c. At all druggists or write us direct.

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FOR PAIN
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Lynwood Creamery, Dairy and Stock Farm,
JAS. R. BOAL, Mgr. P. O. Box 686, Los Angeles, Cal.

Breeders' Directory.

Six lines or less in this directory at 50c per line per month.

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BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

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BROWN LEGHORN Eggs from my winners at San Francisco, Oakland and Sacramento, \$2.50 per 15; \$4.50 per 30. L. W. Matthias, Sacramento, Cal.

MRS. J. G. FREDERICKS, Madison, Cal. Fresh Eggs in small or large lots at reasonable prices from choice Brown and Buff Leghorns, Black and White Minorcas.

SACRAMENTO POULTRY SUPPLY CO., 1025 J St., Sac to. (Successor to Townsend & Co.) Manufacturers and dealers in Poultry Supplies. Coast agents Monitor Incubator (highest award World's Fair). Thoroughbred Poultry and Eggs. Catalogue free.

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BERKSHIRE AND POLAND-CHINA HOGS, Best Stock; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

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J. B. HOYT, Bird's Landing, Cal. Importer and Breeder of Shropshire Sheep; also breeds Crossbred Merino and Shropshire Sheep. Rams for sale. Prices to suit the times. Correspondence solicited.

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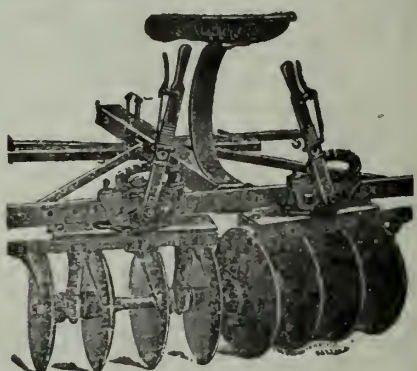
Hatches Chickens by Steam. Absolutely self-regulating. The simplest, most reliable, and cheapest first-class hatcher in the market. Circulars free. GEO. ETEL CO., Quincy, Ill.

NEVER BEATEN

In all the many shows in which it has participated, there must be something in the superior claims of the RELIABLE INCUBATOR. Self-regulating, entirely automatic, you put in the eggs, the Reliable does the rest. All about this and many things of value to the poultry man in our new book. Send 10 cts. for it. RELIABLE INCUBATOR & BROODER CO., QUINCY, ILL.

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Pacific Reversible Disc Harrow.

4-foot, 5-foot and 6-foot sizes in 16 or 20-inch discs. We guarantee that this Harrow can be more quickly reversed than any machine in the market. Our prices are a revelation. An extension can be furnished admitting of a space of between 5 and 6 feet between gangs. A center-cut device can be furnished, if desired.

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16 and 18 Drumm St., San Francisco.

MYSTIC CART

"With 14 attachments": Disc Cultivator with hatching dicker \$24.50; sulky plow, \$25. 16-in. S. B. plow, \$9; walking cultivator, \$10; riding cultivator, \$16.64; tooth lever harrow, \$7.60; disc harrow, \$16; hay rake, \$11.65; 3-in. wagon, \$39; leather top buggy, \$35; sewing machine, \$11. 1000 other implements at one-half dealers prices. Catalogue free. Hapgood Plow Co., Box 117, Alton, Ill.

DIRECT TO THE FARMER



SMOKE YOUR MEAT WITH KRAUSERS LIQUID EXTRACT OF SMOKE

Circular. E. KRAUSER & BRO. MILTON, PA.

AMERICAN AND FOREIGN PATENTS

DEWEY, STRONG & CO. 330 MARKET ST.

The Government Secures Promising Plants.

Secretary Wilson of the Department of Agriculture at Washington, in pursuance of his determination as far as practical to utilize the agricultural seed appropriation in securing "new, rare and valuable" seeds, dispatched Professor Niels E. Hansen, professor of horticulture at Brookings, S. D., to eastern Europe and Asia to secure new seeds and plants and to ascertain what the people at the original cradle of mankind had been doing to adapt plants to their conditions. Professor Hansen is now preparing his report for publication, after a trip involving many thousands of miles of travel in eastern Russia, Russian Turkestan, western China and Siberia.

The trip was a successful one, many promising varieties being obtained. About three carloads of seeds will be distributed to State experiment stations and others. These seeds, it is expected, will be chiefly of value in the arid regions, the purpose of Professor Hansen's trip being to obtain such as were distinguished for resistance to drought and heat. The following is a digest of his findings:

1. In Central Asia a marked feature of the agriculture was found to be the native alfalfa, which is a distinct subspecies of the common alfalfa and greatly superior to it in extent of root system and capacity for resisting drought and heat. This has been shown by actual trial side by side in Turkestan and it has been introduced by the Russian Government into the region east of Volga river in European Russia, and is also coming into cultivation in southern Siberia.

2. The muskmelons of Russian Turkestan, Bokhara, Khiva and transcaucasia were deemed worthy of introduction. Many varieties run from twenty-five to thirty-five pounds in weight, oval in shape, flesh snow white, melting and superior in quality to any American variety. Some varieties keep all winter.

3. A large quantity of pits of the choicest varieties of the Vladimir race of cherries of East Russia was obtained from carefully selected fruit. These come practically true to seed, bear fruit of large size and excellent quality and endure 40 degrees below zero Fahrenheit. These trees, however, are a distinct race of cherry and must be grown from seed or sprouts in the true Russian fashion, as they are short-lived and tender when grafted or budded.

4. One thousand plants, the entire obtainable stock, was secured of a new species of raspberry. The fruit is orange yellow in color, of large size and of peculiar but very pleasant flavor. The plant has proved hardy at St. Petersburg. This is a new departure in raspberries and is worthy of general trial.

5. Scions of some new hybrids of the hardiest variety of the small fruit and Siberian crab with hardiest Russian apples, originated by a Russian experimenter by artificial cross-fertilization. These will be valuable for trial in our Northwest, far north of the present limits of apple-tree culture.

6. The Russian method of absolutely preventing the root killing of apple trees on hard stocks was carefully studied, and seeds obtained for trial. This method will no doubt prove a great boon to a large part of our northwestern prairie States where root killing is the main obstacle to successful apple-tree culture.

7. From Turkestan, West China and transcaucasia native varieties of apricot, plum, peach, cherry, apple, pear, quince, grape and other fruits and a collection of vegetables were obtained.

8. A collection of new ornamental trees, shrubs and plants from Siberia, Turkestan and the Caucasus.

9. Seeds and plants used in Russian forestry experiments to bind the sand dunes or moving sands of the deserts of southeast Russia and Turkestan.

10. Small lots of a number of legumes, cereals, grasses, trees, fruits,

shrubs and ornamental plants, etc., recently discovered by Russian scientific expeditions.

11. The Siberian hardy or sand vetch, as grown in the Volga region of East Russia, was obtained in large quantity for general distribution. This plant has been widely tested at the American agricultural experiment stations and is now considered to be one of the best fodder plants for all parts of the United States. Select seed of the Russian red clover was also obtained for limited trial, as Russian experimenters have found their native clover to be harder than that commonly grown in America.

12. Seeds of many other Russian varieties of cereals were obtained from the dry sections of European Russia, due regard being paid to their market value from an American and English standpoint.

No lamp is a good one without the chimney made for it.

Go by the Index.

Write Macbeth Pittsburgh Pa

TO ORCHARD MEN AND SPECULATORS.

A valuable orchard property, nearly in full bearing, in one of the best fruit sections in the State, for sale. Noted for the quantity and quality of its apricots. Owner non-resident. Four years ago it could not have been bought for less than \$250 per acre. Everything in first-class condition. Fair output for this season, \$5000. Only purchasers who have cash and mean business need apply. No agents or trading. Address Box 36, this office.

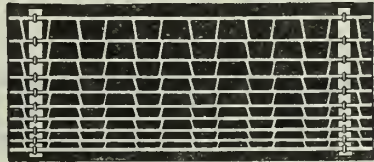
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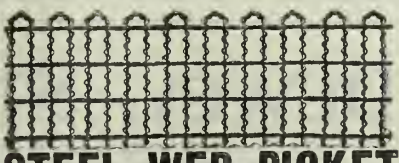
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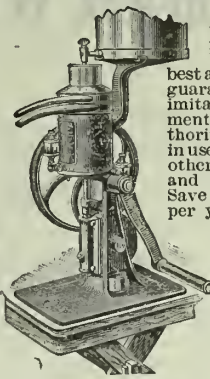
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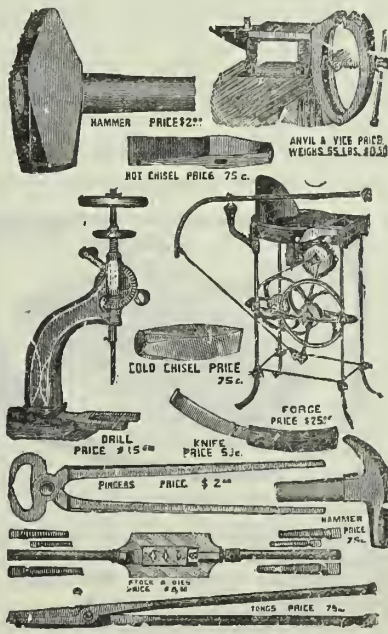


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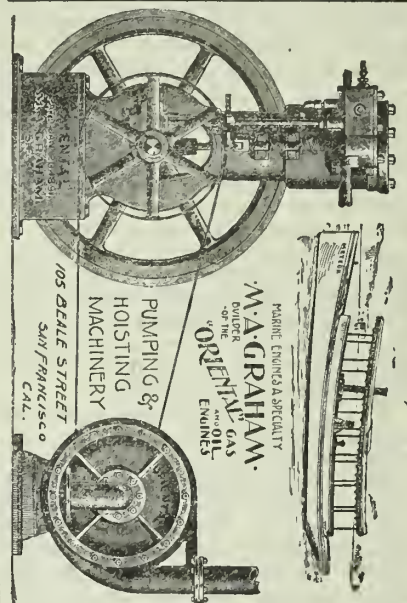
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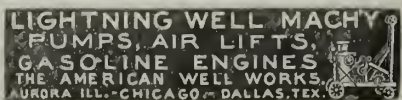
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CEREAL CROPS.

The Efficacy of Summer Fallow.

By VITAL E. BANGS at the University Farmers' Institute at Modesto.

In a section of country like ours, where the rainfall is seldom in excess of the actual needs, and where sometimes it falls short, any means by which we can retain moisture in the soil and thereby retard evaporation must be regarded with special interest. Plants in every country of the temperate zones and of the tropics absorb an incredible amount of water. This water is chiefly derived from the soil and must be supplied in abundance if plants are to arrive at full perfection.

Why is it that crops on fallow land seldom, if ever, fail with us? It is not altogether owing to the additional amount of plant food furnished by soil disintegration during two consecutive seasons, but to the fact as well that the cereals get the benefit of the moisture precipitated during two years. Hence it should be the leading object in preparing summer-fallow ground to prevent the moisture from evaporating.

Farmers long ago found out the good effects of keeping the ground loose and mellow around growing trees and plants, and this they properly named cultivation. But the reasons why it was well to thus stir the soil were not so well understood then as now, for natural philosophy had not then lent its cunning to explain the mysteries of plant life or the conditions most favorable to plant growth, and, beyond the fact that weeds were kept from sapping the ground by cultivation and that the rootlets or so-called feeders could the more easily penetrate a loose soil, little was known. Now we know that the grand object of cultivation is the conservation of soil moisture.

Why is the soil moisture kept from evaporating by means of plowing, harrowing or cultivating?

First, because the capillary tubes, which abound in every compact soil, are broken up. The function of these tubes is to bring up water from below as fast as it is evaporated at their upper ends by the heat of the sun. The destruction of these capillary tubes by the plow or harrow stops the upward flow of the water.

We have an exact counterpart of these capillary tubes in the wick of a common lamp. By the exertion of a peculiar attractive force in nature, called capillary action, the oil in a lamp rises to the top of the wick, where, on the application of more or less heat, the evaporation of the oil takes place more or less rapidly. If exposed to the sun's rays the evaporation would be slow; if exposed to a flame the evaporation would be correspondingly rapid. Now, if a pair of scissors were to sever the wick of a burning lamp the flame would be extinguished, because it could get no more oil to feed upon, and the oil below would be kept from evaporating. Now let us substitute for the wick some earth, for the oil some water and for the scissors a plow share, and the analogy is complete.

Second, the soil moisture is kept from evaporating because the plow, harrow or cultivator breaks up the soil into small fragments of irregular shape lying so loosely on one another as to admit a vast volume of air in their interstices.

How is this air instrumental in keeping the lower moisture from evaporating? Evidently by its being a non-conductor of heat.

We have all heard that in the Eastern States, where they have cold winters and hot summers, they have a double sash to some of their cellar windows, with an air chamber between the front and rear panes of glass, to prevent the heat of the cellar from passing out in winter and from coming in in the summer. On this same principle the innumerable air chambers in the cultivated soil interpose an impenetrable shield to the fierce rays of a summer's sun and the moisture underneath is kept too cool for any extensive evaporation. But it must be borne in mind that the air to be made thus useful must be confined. It must not have

A TOTAL DISABILITY CLAIM OF \$1,650 PAID TO A MAN WHO WAS AFTERWARD CURED.

The *Monitor*, a newspaper published at Meaford, Ont., Canada, first discovered this case two years ago and published it at length, which now seems, owing to the cure of it, to be a miracle. The facts were so remarkable that many people doubted the truth of them. They said: "It is too remarkable; it cannot possibly be true; the paper is mistaken, and the man, although he may think himself cured, will soon relapse into his former condition," etc., etc. The accuracy of its report called in question, the *Monitor* determined to find out definitely whether the facts were as stated and whether the man would really stay cured. They accordingly kept a close watch on the case for two years after the first article appeared, and have just

mouth sufficiently wide to take solid food. The doctors called the disease spinal sclerosis, and all said he could not live.

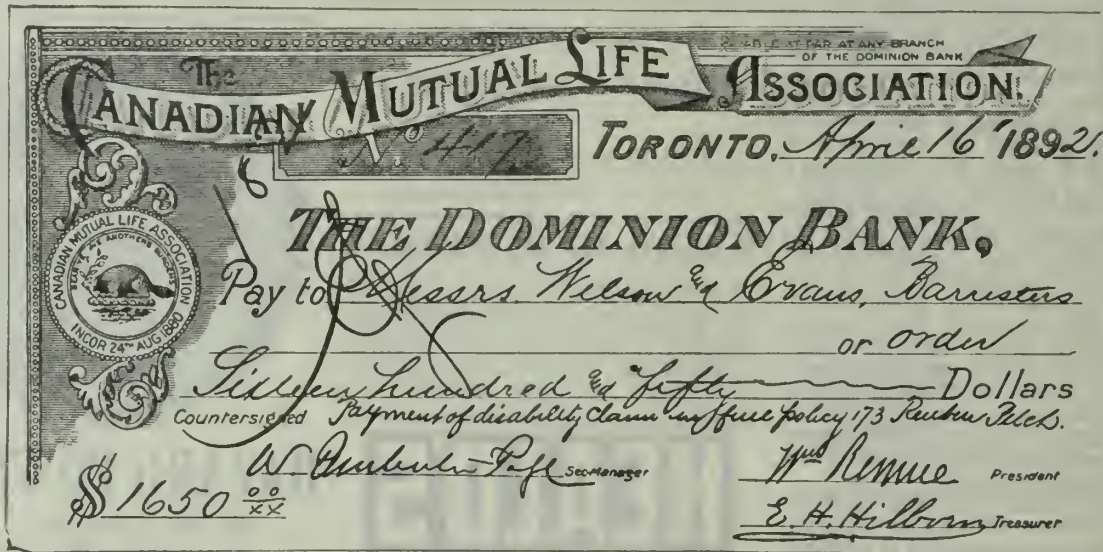
For three years he lingered in this condition. Then by some friends he was advised to take Dr. Williams' Pink Pills for Pale People. He took them and there was a slight change. The first thing noted was a tendency to sweat freely. This showed there was some life left in his helpless body. Next came a little feeling in his limbs. This extended, followed by prickling sensations, until at last the blood began to course freely, naturally and vigorously through his body, and the helplessness gave way to returning strength, the ability to walk returned, and he was restored to his old time health.

I am in even better health than when I gave you the first interview."

"Do you still attribute your cure to the use of Dr. Williams' Pink Pills?" asked the *Monitor*.

"Unquestionably I do," was the reply. "Doctors had failed, as had also the numerous remedies recommended by my friends. Nothing I took had the slightest effect upon me until I began the use of Dr. Williams' Pink Pills. To this wonderful medicine I owe my release from the living death. I have since recommended these pills to many of my friends, and the verdict is always in their favor. I shall always bless the day I was induced to take them."

Such is the history of one of the most remarkable cases of modern times. Can any



now published another article about it in which the original reports are completely verified, the cure is permanent, and they publish a fac simile of the check given by the Canadian Mutual Life Association for \$1,650.00, amount of total disability claim paid by them to Mr. Patch.

The first account stated that the patient (see address below) had been a paralytic for five years; that there was such a total lack of feeling in his limbs and body; that a pin run full length could not be felt; that he could not walk or help himself at all; for two years he was not dressed; furthermore, that he was bloated, was for that reason almost unrecognizable, and could not get his clothes on. The paralysis was so complete as to affect the face and prevented him from opening his

The above is the substance of the first article published by the *Monitor*. Now follow some clippings, taken from the same paper two years afterward, and there is not the slightest shadow of a doubt, in view of this testimony, that Mr. Patch's cure is permanent. Here follows the account:

On being again questioned, Mr. Patch said: "You see those hands—the skin is now natural and elastic. Once they were hard and without sensation. You could pierce them with a pin and I would not feel it, and what is true of my hands is true of the rest of my body. Perhaps you have observed that I have now even ceased to use a cane, and can get about my business perfectly well. You may say there is absolutely no doubt as to my cure being permanent. Indeed

one say, in the face of such testimony, that Dr. Williams' Pink Pills are not entitled to the careful consideration of any suffering man, woman or child? Is not the case in truth a miracle of modern medicine?

To make the evidence complete we publish above a fac simile cut of the check received by Mr. Patch from the Canadian Mutual Life Association, being the amount due him for total disability. It is unnecessary to add that this life insurance association did not pay this large amount of money to Mr. Patch, except after the most careful examination of his condition by their medical experts. They must have regarded him as forever incurable.

Mr. Patch's address is as follows: Reuben Patch, Griersville, Ont., Canada.

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Illus. 32" If the agent in your section has not called on you, or if there is no agent there, communicate direct with me. Note that I deliver on cars in SAN FRANCISCO and CHICAGO.
Mention this paper. (Millington, New Jersey, and 30 So. Canal St., Chicago.)

DUANE H. NASH, Sole M'fr.,

free communication with the outer air, else the effect will be to quickly dry out the ground; hence the advantage of pulverizing the ground on top.

A Wonderful Churn.

I have been in the dairy business all my life and have many times churned for an hour before butter would appear, so when I heard of a churn that would churn in a minute I concluded to try it. Every day for a week I used it, and not only could I churn in a minute, but I got more and better butter than with a common churn. This is very important information to butter makers. The churn works easily and will churn an ordinary churning in less than sixty seconds. I have sold two dozen of these churns in the past month. Every butter maker that has seen me churn in less than a minute bought one. You can obtain all desired information regarding the churn by addressing Mount City Churn Co., St. Louis, Mo., and they will give you prompt and courteous attention.

A DAIRYMAN.

For Sale.—A Ditching Machine.

Cuts any width from 4 to 15 feet, and 6 or 7 feet deep. Can make 600 feet a day in reclaimed marsh land, cutting 8 feet wide and 7 feet deep; and over 300 feet in upland in hard yellow clay. Can be worked in any ground that a horse can travel over. Machine can also do the work of an ordinary steam shovel. Address JOHN W. FERRIS, 320 Sansome St., S. F.



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S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, March 9, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|-----------------|-------------|
| Wednesday..... | \$1 05½ @ 1 06½ | \$ 92½ @ 91 |
| Thursday..... | 1 07 @ 1 08 | 91½ @ 91 |
| Friday..... | 1 06 @ 1 04½ | 91½ @ 90 |
| Saturday..... | 1 05 @ 1 06 | 89½ @ 90½ |
| Monday..... | 1 06 @ 1 04½ | 90½ @ 90 |
| Tuesday..... | 1 04½ @ 1 05½ | 90½ @ 91½ |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|--------|--------|
| Wednesday..... | 7s 5¼d | 7s 2 d |
| Thursday..... | 7s 5½d | 7s 1½d |
| Friday..... | 7s 5½d | 7s 1½d |
| Saturday..... | 7s 5 d | 7s 1½d |
| Monday..... | 7s 5¼d | 7s 1½d |
| Tuesday..... | 7s 5¼d | 7s 2¼d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|-----------------|----------------|
| Thursday..... | \$1 40½ @ 1 41½ | \$1 31½ @ 1 33 |
| Friday..... | 1 39½ @ 1 40 | 1 32 @ 1 32½ |
| Saturday..... | 1 39½ @ 1 39 | 1 32½ @ 1 32½ |
| Monday..... | 1 38½ @ 1 39½ | 1 31½ @ 1 32½ |
| Tuesday..... | 1 40 @ 1 40½ | 1 32½ @ 1 33½ |
| Wednesday..... | 1 40½ @ 1 41 | 1 33½ @ 1 33½ |

Wheat.

The local wheat market is firmer in tone than a week ago, but beyond this there is no appreciable improvement, quotations standing in about the same position as at date of last review. To purchase freely, an advance would have to be paid, but on selling pressure little if any more could be realized than a week ago. The firmness is almost wholly attributable to local influences, dry weather and light spot stocks. Liverpool ruled a little firmer on California cargoes, being the reflection of this market. Chicago bobbed up and down in a moderate fashion, keeping close to the figures of previous weeks. Reports hinted about great things to happen through manipulations of the Leiter interest, but nothing developed beyond talk. Late advices from Australia state that that country will have no surplus wheat this season. This will have a favorable effect on values for the coming crop on this coast.

While it is yet early to speak definitely concerning the coming crop of wheat in California, it may be regarded as definitely established that the yield will be below the average in a large portion of the southern half of the State. On the west side of the San Joaquin, according to reports received this week, it is now too late for rain to be of any special benefit. On the east side of the San Joaquin the crop is in the main still out of danger, and with a fair amount of spring showers a tolerably good yield may be realized. Throughout the southern counties it is the exception where rain is not needed. There are a few especially favored localities where the grain is looking well, and a good many sections where, with liberal rains during the next sixty days, the harvest returns will likely prove greater than is now generally anticipated. In the northern counties the outlook is on the whole for a liberal yield, although there are some places north where there has been no surplus of rain up to date. Much will depend, both north and south, on the weather from this time forward. That there will be showery weather during the spring months is almost certain, but whether there will be enough, at the right time, and in the places most needed, remains to be determined.

In the matter of wheat exports, March started off with an excellent showing, as compared with previous month, five vessels clearing in the first five days. It is not to be expected, however, that this record will be maintained throughout the month. The wheat is not offering in sufficient quantity to admit of it, neither does the present foreign demand warrant anticipating a steady movement such as above noted. A desire to avoid the Assessor had much to do with the free clearances during the first week in March.

| | |
|-------------------------------------|-----------------|
| California Milling..... | \$1 42½ @ 1 47½ |
| Cal. No. 1 shipping, alongside..... | 1 40 @ 1 42½ |
| Oregon Valley..... | 1 37½ @ 1 40 |
| Walla Walla Blue Stem..... | 1 40 @ 1 45 |
| Walla Walla Club..... | 1 35 @ 1 40 |

CALL BOARD PRICES.

On San Francisco Call Board prices for No 1 white wheat per cental for the week were as follows for the options named:

May, 1898, delivery, \$1.38½ @ 1.41½.

December, 1898, delivery, \$1.31½ @ 1.33½.

Wednesday, at regular noon session of Call

Board, May wheat sold at \$1.40½ @ 1.41; December, 1898, \$1.33½ @ 1.33½.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|---------------|----------------|
| Liv. quotations..... | 6s7d @ 6s8d | 7s10½d @ 7s11d |
| Freight rates..... | 15 @ 16½s | 25 @ 27½s |
| Local market..... | \$1.35 @ 1.40 | \$1.40 @ 1.42½ |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

Values and the general tone show much the same condition as previously noted. Business is not particularly active, either for export or on local account. Spot supplies are of only moderate volume, but at the same time are more than enough for immediate needs. While market cannot be termed firm, some favorite brands are commanding in a small way an advance on quotable rates.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | \$3 00 @ 3 25 |
| Superfine, good to choice..... | 3 35 @ 3 60 |
| Country grades, extras..... | 4 00 @ 4 25 |
| Choice and extra choice..... | 4 25 @ 4 50 |
| Fancy brands, jobbing..... | 4 50 @ 4 65 |
| Oregon, Bakers' extra..... | 3 90 @ 4 25 |
| Walla Walla, Bakers' extra..... | 3 90 @ 4 25 |

Barley.

This market has developed no very radical changes since last report, but is, in the main, stronger. Present prospects are there will be no very cheap barley during the balance of the season, and it is doubtful if values during the coming barvest year will touch as low levels as they have the early part of the present season. Most of the barley now offering is of ordinary feed descriptions, and it is the exception where any of this sort is being urged to sale at less than full current figures. Desirable brewing barley is not plentiful, and most holders expect to realize later on better prices than are now obtainable. Call Board dealings in No. 1 feed, May and December deliveries, averaged higher than preceding week, market closing against sellers.

| | |
|---------------------------------|---------------|
| Feed, No. 1 to choice..... | 1 07½ @ 1 10 |
| Feed, fair to good..... | 1 02½ @ 1 07½ |
| Brewing, No. 1 to choice..... | 1 12½ @ 1 20 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

May, 1898, delivery, \$1.03 @ 1.08½.

December, 1898, delivery, 92 @ 97½c.

Wednesday at regular noon session of the Call Board May, 1898, feed sold at \$1.06½ @ 1.07½; Dec., 1898, 97 @ 97½c.

Oats.

While the tendency of the oat market for feed and milling descriptions has been to more firmness, quotable values show no decided change for the better. Buyers were disposed to take hold a little more freely at former figures, but refused in most instances to operate when higher prices were asked. Indications are favorable, however, for values being established on a higher plane in the near future. Colored oats ruled quiet, with values nominally as last quoted.

| | |
|-------------------------------|---------------|
| White Oats, fancy feed..... | 1 22½ @ 1 25 |
| White, good to choice..... | 1 15 @ 1 20 |
| White, poor to fair..... | 1 07½ @ 1 10 |
| Gray, common to choice..... | 1 12½ @ 1 22½ |
| Milling..... | 1 17½ @ 1 22½ |
| Surprise, good to choice..... | 1 20 @ 1 27½ |
| Black Russian..... | 1 20 @ 1 40 |
| Red..... | 1 05 @ 1 40 |

Corn.

As regards quotable values, the market remains about as last noted. Business doing is mostly in Eastern product, which is in fair supply and is seemingly cheaper than the home article. When quality is taken into consideration, however, it is doubtful if the imported is any lower than the domestic. The Eastern being considered the cheaper of the two, is receiving the bulk of attention at present, some of the heaviest buyers looking fully as much or more to price than to quality.

| | |
|----------------------------------|--------------|
| Large White, good to choice..... | 1 05 @ 1 07½ |
| Large Yellow..... | 1 05 @ 1 07½ |
| Small Yellow..... | 1 10 @ 1 12½ |
| Eastern Yellow..... | 1 02½ @ 1 05 |
| Egyptian White..... | — @ — |
| Popcorn, shelled, ½ lb..... | — @ — |

Rye.

There is not much offering, neither is there any active demand. Values appear to be steady.

Good to choice, new..... 1 05 @ 1 07½

Buckwheat.

Owing to absence of offerings, the wholesale market is lifeless. In a small jobbing way tolerably stiff figures are realized.

| | |
|---------------------|-------------|
| Good to choice..... | 1 75 @ 1 90 |
| Silverskin..... | — @ — |

Beans.

The market is no lower than last quoted. Some holders, in fact, refuse to let go at current rates, expecting to realize more later on. The firmness is more pronounced on white va-

rieties than on colored, owing to the former being cheaper. It has been quite apparent for some time that either white beans were too low or colored were too high. Prices for white beans are more apt to advance than colored are to recede. At the same time there is a possibility of values for colored declining slightly, and prices for white moving upward, thus bringing the two closer together. Limas are not being offered freely, either here or at points of production.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 50 @ 1 60 |
| Small White, good to choice..... | 1 50 @ 1 65 |
| Long Washington..... | 1 45 @ 1 55 |
| Butter, small..... | 1 45 @ 1 55 |
| Butter, large..... | 1 60 @ 1 75 |
| Pinks..... | 2 60 @ 2 75 |
| Bayos, good to choice..... | 2 90 @ 3 00 |
| Reds..... | 2 00 @ 2 25 |
| Red Kidneys..... | 2 00 @ 2 25 |
| Limas, good to choice..... | 2 00 @ 2 25 |
| Black-eye Beans..... | 2 25 @ 2 50 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

The bean market on the Atlantic side, according to recent mail advices from New York, is outlined as follows, prices quoted being per 60-lb bushel:

So far as the volume of business in Marrow beans is concerned, this week has been in strong contrast with the one immediately preceding. Some lots have been shipped that were bought last week, but exporters had only a few new orders in hand, and the trading on home account has been marked by the same cautious, conservative operations that have characterized the jobbing trade nearly all the winter. The recent heavy reduction in stocks, however, has had a beneficial effect upon the situation, and the price of choice stock has been held very steady at \$1.40. State Medium have jobbed out slowly, but the quantity of stock offering has been so light that values have ruled fairly firm. Quite a good many carloads of Canadian have been sold in bond for export. The movement in Pea has been rather light, and yet there has been a disposition to ask a full rate for choicest lots; sales have been at \$1.12½ @ 1.15, with the outside figure more general toward the close. Only a few White Kidney have been wanted. The demand for Red Kidney has also been light, but stocks are under pretty good control and there is a firm holding in consequence. Very little call for Turtle Soup, and it has been difficult to exceed \$1.55 for best lots. Yellow Eye still dragging. The strong speculative demand for California Lima that developed last week has continued, and prices have advanced sharply, closing strong, with some holders asking more than we quote. Green peas steady but quiet.

Dried Peas.

Not many home-grown are coming forward, either Green or Niles. Some of the jobbers and millers are fairly well stocked with Green Peas from the East. Business is now of a light order, but values for both varieties show steadiness.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 80 @ 2 00 |
| Niles Peas..... | 1 40 @ 1 50 |

Hops.

Receipts are light in this center, and offerings in a wholesale way or of invoice lots are of slim volume. All evidences point strongly to the conclusion that there are few hops now remaining in the hands of growers on this coast. Market is moderately firm in tone. Business doing is mostly in supplies of jobbers. Some recent sales have been made at figures higher than were justified as a quotation.

Good to choice, 1897 crop..... 12 @ 16

A New York review, coming through by mail of recent date, gives the following concerning the hop market:

Operators here have been watching the English markets closely of late to see what effect the recent heavy arrivals of American hops would have over there; but both mail and cable advices say that the large importations have not had the depressing effect that some expected, and while trade has been quieter prices are holding quite firm on most grades. The fact that English hops are practically out of first hands makes a larger place for the American goods. Coupled with these reports we have had pretty firm advices from the interior of this State and from the Pacific coast. Stocks in both of these sections are in very small compass and growers share the opinion that everything will be wanted before the next crop is ready to be handled. Our local market has remained very quiet. Some stock is being delivered to brewers, chiefly on previous purchases, and a little new business transpires from time to time. No one is inclined to negotiate largely, and the strength of the position lies largely in the fact of very moderate supplies. Prices throughout are unchanged; considerable firmness is shown in choice qualities.

Wool.

No change to record in the situation. Market is exceedingly quiet, with holders patiently awaiting a change for the better. The opinion is entertained in wool circles that it will not be many weeks before activity will be resumed. Buyers may hold off until spring wools put in an appearance in wholesale quantity. When purchasing does begin, there is likely to be for a month or more some very active trading.

| | |
|-----------------------------------|---------|
| Oregon Eastern, choice..... | 13 @ 15 |
| Oregon Eastern, fair to good..... | 10 @ 12 |

FALL.

| | |
|----------------------------|---------|
| Middle County, free..... | 10 @ 13 |
| Northern, free..... | 11 @ 14 |
| Southern Mountain..... | 9 @ 12 |
| San Joaquin defective..... | 7 @ 8½ |

Hay and Straw.

Market for stable hay is a little lower than a week ago, the quotable decline being about 50c per ton. Receipts showed moderate increase, and buyers did not take hold so freely as for several weeks preceding. Cow and stock hay remained as last quoted, with supplies of the same about equal to the immediate demand. Straw was in light receipt, former values continuing in force.

| | |
|--------------------|---------------|
| Wheat..... | 16 00 @ 18 50 |
| Wheat and Oat..... | 15 00 @ 18 00 |
| Oat..... | 14 50 @ 16 50 |
| Barley..... | 13 00 @ 16 00 |
| Clover..... | 11 00 @ 13 00 |
| Stock Hay..... | 10 00 @ 12 00 |
| Alfalfa..... | 10 00 @ 11 50 |
| Compressed..... | 15 00 @ 18 50 |
| Straw, ½ bale..... | 40 @ 50 |

Millstuffs.

Tendency on Bran and Middlings was in favor of buyers, although no pronounced change was effected in quotable rates. Rolled Barley market was quite firm. In prices for Milled Corn no important changes were recorded.

| | |
|---------------------|---------------|
| Bran, ½ ton..... | 16 00 @ 17 00 |
| Middlings..... | 18 00 @ 23 00 |
| Barley, Rolled..... | 23 00 @ 24 00 |
| Cornmeal..... | 23 00 @ 23 50 |
| Cracked Corn..... | 23 50 @ 24 00 |

Seeds.

Mustard is hardly quotable at present, owing to insignificant supplies. There is no likelihood of there being any of consequence on the market until next crop. Flaxseed is nearly out of stock, although a small quantity arrived this week from the North. Market is steady. Alfalfa Seed is in fairly liberal supply and in light request. Business doing in Bird Seed is not extensive and is within range of unchanged quotations.

| | |
|----------------------------|-------------|
| Mustard, Yellow..... | 2 75 @ 3 00 |
| Mustard, Trieste Seed..... | 2 75 @ 3 00 |
| Mustard, Wild Brown..... | 2 00 @ 2 25 |
| Flax..... | 2 10 @ 2 25 |

| | |
|--------------------|---------|
| Canary..... | 2½ @ 2½ |
| Rape..... | 2½ @ 2½ |
| Hemp..... | 2½ @ 3¼ |
| Alfalfa, Utah..... | 5½ @ 6¼ |

Bags and Bagging.

The Grain Bag market shows no changes in quotable values, but there is a weak tone, with little doing and prospects not encouraging from the standpoint of manufacturers and importers, as the season's requirements bid fair to be under the average. Wool Sacks are in fair supply and are beginning to require attention on account of spring clip.

| | |
|--------------------------------------|----------|
| Calcutta Grain bags, buyer July..... | — @ — |
| Calcutta Grain bags, 2x36, spot..... | 5½ @ 5½ |
| State Prison bags, per 100..... | 5 30 @ — |
| Wool sacks, 4 lb..... | 30 @ — |
| Wool sacks, 3½ lb..... | 27 @ — |
| Gunnies..... | 10 @ — |
| Bean bags..... | 4½ @ 4½ |
| Fruit sacks, cotton..... | 5½ @ 6½ |

Hides, Pelts and Tallow.

Hides are in fair request at the prevailing rates. Pelts are not coming forward in large quantity and values remain steady. Tallow is not arriving very freely and sells to good advantage as for a month or more past.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|----------|
| Heavy Steers, over 56 lbs..... | 10½ @ — | 9½ @ — |
| Medium Steers, 48 to 56 lbs..... | 9½ @ — | 8½ @ — |
| Light Steers, under 48 lbs..... | 9 @ — | 8 @ — |
| Heavy Cow Hides, over 50 lbs 9 @ — | 8 @ — | 8 @ — |
| Light Cow Hides, under 50 lbs 9 @ — | 8 @ — | 8 @ — |
| Wet Salted Kip..... | — @ 10 | — @ 9 |
| Wet Salted Veal..... | — @ 10 | — @ 9 |
| Wet Salted Calf..... | — @ 11 | — @ 10 |
| Dry Hides..... | 17 @ 17½ | 13½ @ 14 |
| Dry Kip and Veal, 11 to 16 lbs..... | 14 @ 15 | — @ 11 |
| Dry Calf, under 4 lbs..... | 18 @ 20 | 16 @ 17 |
| Horse Hides, large..... | 2 25 @ 2 75 | — @ — |
| Horse Hides, medium..... | 2 00 @ 2 25 | — @ — |
| Horse Hides, small..... | 2 50 @ — | — @ — |
| Colts' Hides..... | 25 @ 50 | — @ — |
| Pelts, long wool, per skin..... | 90 @ 1 20 | — @ — |
| Pelts, medium, per skin..... | 70 @ 90 | — @ — |
| Pelts, short wool, per skin..... | 40 @ 70 | — @ — |
| Pelts, shearing, per skin..... | 20 @ 30 | — @ — |
| Deer Skins, best summer..... | 25 @ 30 | — @ — |
| Deer Skins, good medium..... | 20 @ 30 | — @ — |
| Deer Skins, thin winter..... | — @ 10 | — @ 10 |
| Elk Hides..... | 10 @ 12 | — @ — |
| Tallow, good quality..... | 3 @ 3½ | — @ — |
| Tallow, No. 2..... | 2 @ 2½ | — @ — |
| Goat Skins, perfect..... | 30 @ 37½ | — @ — |
| Goat Skins, damaged..... | 10 @ 20 | — @ — |
| Kid Skins..... | 5 @ 10 | — @ — |

Honey.

A firmer tone is prevailing, more especially for Extracted, than at any previous date the current season. The market has been relieved of all low-grade and cheap Extracted, on orders from Germany. Some was taken which was "black as the ace of spades," and had been on the market two and three years. Quality was not considered so long as the price did not exceed 2½ @ 2½c. This honey was wanted to fill a gap ordinarily filled with a low-grade product from Cuba. Comb honey continues in fair supply, and values for the same are without quotable improvement.

| | |
|------------------------------|---------|
| Extracted, White Liquid..... | 4½ @ 5 |
| Extracted, Light Amber..... | 3½ @ 4½ |
| White Comb, 1-lb frames..... | 8 @ 9½ |
| Amber Comb..... | 5 @ 6 |

Beeswax.

Market is firm at previous quotations, with stocks light. Most holders are asking higher figures than below noted.

Fair to choice, ½ lb..... 24 @ 27

Live Stock and Meats.

Market for Beef is ruling strong, especially for best qualities, with indications that higher values than are now current will be soon experienced. Choice cattle are scarce and are likely to so continue until feed becomes more plentiful and cheaper. Mutton is higher, for same reasons affecting beef, and is likely to continue against buyers for some weeks to come. Hogs were in fair receipt and prices showed no change for the better.

| | |
|---|----------|
| Beef, 1st quality, dressed, net ½ lb..... | 6½ @ — |
| Beef, 2d quality..... | 5½ @ 6 |
| Beef, 3d quality..... | 4 @ 5 |
| Mutton—ewes, 8½ @ 9c; wethers..... | 4½ @ 4½ |
| Hogs, hard grain fed, medium..... | 4½ @ 4½ |
| Hogs, small..... | 4 @ 4½ |
| Hogs, large hard..... | 4½ @ 4½ |
| Hogs, soft and feeders..... | 3½ @ 3½ |
| Hogs, country dressed..... | 5 @ 5½ |
| Veal, small, ½ lb..... | 6 @ 7½ |
| Veal, large, ½ lb..... | 6½ @ 7 |
| Lamb, Yearling, ½ lb..... | 9 @ 9½ |
| Lamb, Spring, ½ lb..... | 12½ @ 15 |

Poultry.

Young poultry in prime to choice condition was scarce and high, and is likely to be salable to very good advantage for several weeks to come. Old Chickens, Ducks and Geese were in ample supply, in connection with Eastern poultry, to give retailers all

they required and leave some over. Three cars of Eastern were received. Turkeys were not in heavy receipt, and in a small way brought comparatively good prices.

| | |
|---------------------------------------|-----------------|
| Turkeys, dressed, # lb. | 13 @ 15 |
| Turkeys, live hens, # lb. | 12 @ 13 |
| Turkeys, live gobblers, # lb. | 11 @ 12 |
| Hens, Cal., # doz. | 4 00 @ 5 00 |
| Roosters, old, # doz. | 4 00 @ 5 00 |
| Roosters, young, (full-grown), # doz. | 4 00 @ 5 00 |
| Fryers, # doz. | 6 00 @ 6 50 |
| Broilers, large, # doz. | 5 00 @ 6 00 |
| Broilers, small, # doz. | 3 00 @ 4 50 |
| Ducks, young, # doz. | 6 00 @ 7 50 |
| Ducks, old, # doz. | 4 00 @ 5 00 |
| Geese, # pair. | 1 50 @ 1 75 |
| Goslings, # pair. | 2 25 @ 2 50 |
| Pigeons, Old, # doz. | 1 12 1/2 @ 1 25 |
| Pigeons Young, # doz. | 1 50 @ 1 75 |

Butter.

Market is again lower, with arrivals heavier than the immediate demands. There has been little outlet lately for this product, owing to prices here being above Eastern values. Eastern butter has been lately landed, not only at points North and South, usually supplied from this center, but has been brought into San Francisco in wholesale quantity, and has had much to do with depressing values. While the market is weak, it is believed that prices have about touched bedrock. Preparations are now being made to pack the surplus.

| | |
|---------------------------------------|-------------|
| Creamery extras, # lb. | 18 @ 19 |
| Creamery firsts, # lb. | 17 1/2 @ 18 |
| Creamery seconds, # lb. | 16 1/2 @ 17 |
| Dairy select, # lb. | 15 @ 16 |
| Dairy soft and wedy, # lb. | 14 @ 15 |
| Mixed store, # lb. | 13 @ 14 |
| Creamery in tubs, # lb. | 12 @ 13 |
| Pickled roll, # lb. | 11 @ 12 |
| Dairy in tubs, # lb. | 10 @ 11 |
| Firkin, Cal., choice to select, # lb. | 17 @ 19 |
| Firkin, common to fair, # lb. | 15 @ 16 |

Cheese.

A tolerably good demand is being experienced, but at rather low figures. At the same time, cheese is bringing relatively better values than butter. Realizing this fact, receivers are not missing an opportunity to effect sales, being confident there is nothing to be gained by holding.

| | |
|-------------------------------------|----------------|
| California fancy flat, new, # lb. | 9 @ 9 1/2 |
| California, good to choice, # lb. | 8 1/2 @ 9 |
| California, fair to good, # lb. | 7 1/2 @ 8 |
| California Cheddar, # lb. | 9 1/2 @ 10 1/2 |
| California, "Young Americas", # lb. | 9 @ 10 |

Eggs.

Prices have continued at about same range as quoted in last issue, with demand fairly active, but mainly for the lowest priced eggs. Consignments from all quarters, both henry and store-gathered stock, are still showing good quality. So long as this continues to be the case, no material change in values is likely to be experienced. When poor eggs begin to come forward, common will rule lower and choice higher.

| | |
|---|-------------|
| California, select, large white and fresh, # lb. | 12 @ 12 1/2 |
| California, select, irregular color & size, # lb. | 11 @ 11 1/2 |
| California, good to choice store, # lb. | 10 1/2 @ 11 |
| California, common to fair store, # lb. | 9 @ 10 |
| Oregon, prime, # lb. | 8 @ 9 |
| Held Eastern, as to section and grading, # lb. | 7 @ 8 |
| Local Cold storage eggs, # lb. | 6 @ 7 |

Vegetables.

Receipts of early spring vegetables are on the increase, notably Asparagus, Peas, Rhubarb and Mushrooms, all of which are going at reduced figures. Most kinds of winter vegetables now offering are in light supply. Onions are in fair receipt, mainly from Oregon and Nevada. Values are tolerably steady.

| | |
|---------------------------------------|-------------|
| Asparagus, No. 1, # lb. | 7 1/2 @ 9 |
| Asparagus, common to fair, # lb. | 4 @ 6 |
| Beans, String, # lb. | 10 @ 15 |
| Beans, Lima, # lb. | 8 @ 10 |
| Beans, Refugee, # lb. | 7 @ 9 |
| Beans, Wax, # lb. | 6 @ 8 |
| Cabbage, choice garden, # 100. | 70 @ 80 |
| Cauliflower, # doz. | 60 @ 70 |
| Corn, Green, # sack. | 50 @ 60 |
| Corn, Alameda, # crate. | 40 @ 50 |
| Cucumbers, hot house, # doz. | 50 @ 1 00 |
| Egg Plant, # lb. | 2 1/2 @ 3 |
| Garlic, # lb. | 2 1/2 @ 3 |
| Mushrooms, Buttons, # lb. | 10 @ 12 1/2 |
| Mushrooms, Wild, # lb. | 12 @ 14 |
| Okra, Dried, # lb. | 12 1/2 @ 15 |
| Onions, Yellow, good to choice, # lb. | 2 50 @ 2 75 |
| Onions, Yellow, cut, # lb. | 1 75 @ 2 25 |
| Peas, Sweet, Garden, # lb. | 4 @ 4 |
| Peppers, Green Chile, # lb. | 25 @ 30 |
| Rhubarb, # box. | 1 @ 1 |
| Squash, Summer, # lb. | 1 @ 1 |
| Tomatoes, # box or crate. | 1 00 @ 1 50 |

Potatoes.

A little better tone prevailed in the potato market, the demand showing improvement for ordinary qualities at the reduced figures established the previous week. Some effort was made to place values for common stock on a higher plane, but it was not a success. When it came to a strictly choice table potato the market was fully as favorable to sellers as previously quoted. Seed potatoes ruled quiet at unchanged figures. Sweet potatoes were in light supply and slow of sale.

| | |
|---------------------------------------|-----------|
| Early Rose, River, # cental. | 65 @ 75 |
| Peerless, River, # cental. | 50 @ 60 |
| Reds River, # cental. | 50 @ 60 |
| Garnet Chile, Mission, # cental. | 50 @ 60 |
| Burbanks, Salinas, # cental. | 75 @ 15 |
| Burbanks, River, # sack. | 55 @ 70 |
| Burbanks, Petaluma and Tomales, # cti | 50 @ 60 |
| Burbanks, Humboldt, # cti. | 50 @ 65 |
| Burbanks, Oregon, # cental. | 55 @ 90 |
| Garnet Chile, Oregon, # cental. | 50 @ 60 |
| Sweet River, # cental. | 50 @ 60 |
| Sweet Merced, # cental. | 75 @ 1 00 |

The Fruit Market.

Fresh Fruits.

Apples still stand alone in the market for fresh fruits, outside of citrus varieties. The tendency of values has been upward, especially on choice to select qualities, but at the same time there was nothing to warrant materially altering quotations. In a small way sales are being made at higher figures than below noted. Most of the apples now offering are suitable only for cooking, and on this class of stock competition among buyers is not active, although prices are averaging a little

better than earlier in the season. A choice table apple, such as select Spitzenberg, of desirable size and free from moth or worm hlemish, is in good request at extreme quotations, with a possibility of still higher figures being realized. The absence of other deciduous fruit, and also of berry fruit, causes eating apples of fine quality to be for this time of year in especially good favor with consumers.

| | |
|----------------------------------|-----------|
| Apples, fancy, 4-tier, # box. | 1 25 @ — |
| Apples, choice, 4-tier, # box. | 75 @ 1 00 |
| Apples, fair to good, 50-lb box. | 60 @ 75 |
| Apples, common to fair, # box. | 40 @ 60 |

Dried Fruits.

In cured and evaporated fruits there have been few developments since last review. All handlers report the market exceedingly quiet. Offerings, as for some time past, are mainly Peaches and medium-sized Prunes. Eastern dealers had been taking hold of above named varieties in moderate fashion, low prices prevailing proving attractive, but more of these fruits are seeking custom than buyers had calculated on, and there is a lull in the movement Eastward. This may prove very temporary, however, as Eastern dealers have been pursuing a hand-to-mouth policy, buying only against immediate needs, and it is not likely that they will do so during the balance of the season. Prices throughout the list are not quotably lower, but market cannot be termed firm, unless it be for Apples, halved Pears of fine quality and Pitted Plums, these being all in light stock. Small shipments have been lately made to Europe, mainly Prunes and Apricots. Vessels going north continue to take moderate quantities on Klondike account, Monday's steamer for Victoria, B. C., carrying 45,800 pounds assorted fruit.

EVAPORATED OR BLEACHED.

| | |
|--|---------------|
| Apricots, Royal, in sacks, per lb. | 5 @ 5 1/2 |
| Apricots, Royal, fancy, # lb. | 6 1/2 @ — |
| Apricots, Moorpark, # lb. | 7 @ 7 1/2 |
| Apples, in boxes, # lb. | 7 @ 7 1/2 |
| Figs, fancy pressed, # lb. | 8 @ 10 |
| Nectarines, White, # lb. | 4 1/2 @ 5 |
| Nectarines, Red, # lb. | 4 1/2 @ 5 |
| Peaches, unpeeled, choice, # lb. | 4 @ 4 1/2 |
| Peaches, unpeeled, fancy, # lb. | 5 @ 6 |
| Peaches, peeled, in boxes, # lb. | 9 @ 12 |
| Pears, unpeeled Bartlett's, halved, fancy, # lb. | 7 @ — |
| Pears, halved, unpeeled Bartlett's, # lb. | 4 1/2 @ 6 |
| Pears, quartered, unpeeled Bartlett's, # lb. | 4 @ 5 |
| Pears, peeled and sliced, # lb. | 4 @ 5 |
| Plums, pitted, # lb. | 4 1/2 @ 5 1/2 |
| Prunes, in sacks, 40-50's, # lb. | 3 1/2 @ 5 1/2 |
| 60-70's, # lb. | 3 1/2 @ 3 3/4 |
| 70-80's, # lb. | 2 1/2 @ 3 |
| 80-90's, # lb. | 2 @ 2 1/2 |
| 90-100's, # lb. | 1 1/2 @ 2 |

Above figures are on basis of 2 1/2 @ 2 1/2 c for 4 sizes. Prunes in boxes, 1/2 c higher for 25-lb boxes, 1/4 c higher for 50-lb boxes.
4 sizes Santa Claras and equal, # lb. 2 1/2 @ —
4 sizes San Joaquin and Northern, # lb. 2 1/2 @ —
Prunes, Silver, # lb. 5 @ 8

COMMON SUN-DRIED.

| | |
|---------------------------|-----------|
| Apricots, ordinary, # lb. | 4 @ 5 |
| Apples, sliced, # lb. | 3 1/2 @ 4 |
| Apples, quartered, # lb. | 3 1/2 @ 4 |
| Figs, Black, # lb. | 2 @ 3 1/2 |
| Figs, White, # lb. | 3 @ 4 |
| Peaches, unpeeled, # lb. | 3 @ 4 |
| Plums, unpeeled, # lb. | 1 @ 1 1/2 |

Recent advices by mail from New York report the condition of the dried fruit market in that center as follows:

Evaporated apples have had a fairly active demand this week and with moderate offerings and reports of stock being reduced at primary points market has ruled firm, though prices show no material advance, except for strictly fancy, which have had a few jumping sales up to 3 1/2 @ 10c. Choice seldom exceed 2 1/2 @ 9c, and prime sell mainly at 8 1/2 @ 8c, though some of the best wood-dried fruit is held higher. Sun-dried quarters in moderate supply, but receiving little attention and tone easy. Sun-dried Southern sliced have a fair inquiry and continue firm. Chops about steady, with some stock held up to 4c, though it is extreme. Cores and skins firm and occasional sales reported a shade higher than quoted. Raspberries very dull and weak, though other small fruits in light supply and steady. California fruit has sold well at late prices.

| | |
|--|-----------|
| Apricots, Cal. Moorpark, 1897, per lb. | 8 @ 11 |
| Apricots, Cal. Royal, 1897, per lb. | 5 1/2 @ 8 |
| Peaches, Cal., 1897, peeled, per lb. | 10 @ 16 |
| Peaches, Cal., 1897, unpeeled, per lb. | 5 @ 9 |
| Pears, Cal., 1897, per lb. | 5 @ 10 |
| Prunes, Cal., 1897, per lb. | 3 @ 8 |

Raisins.

The market continues to be heavily handicapped with rain-damaged raisins, which are receiving little attention, either for shipment or on local account, despite the fact that they are being offered at low figures. Loose Muscatel of fair quality and in 50-lb. boxes were urged to sale this week at 75c per box, or 1 1/2 c per lb. This figure leaves virtually nothing for the fruit, after deducting cost of curing and marketing. While the market is weak and dull, faith is still expressed in some quarters that a better condition of affairs will be experienced before the season closes. It is doubtful, however, about market for damaged stock developing any noteworthy firmness. Raisins without taint of rain are now being mainly held above quotations.

F. O. B. FRESNO DELIVERY.

| | |
|----------------------------------|-------------|
| Imperial Clusters, per box. | — @ — |
| Delosa Clusters, per box. | — @ — |
| Fancy Clusters, per box. | — @ — |
| Boxes, London layers, 20-lb box. | 1 00 @ 1 10 |

(Usual advance for fractions.)

| | |
|--------------------------------|---------------|
| Loose Muscatel, 4-crown, # lb. | 3 1/2 @ 4 |
| Loose Muscatel, 3-crown, # lb. | 2 1/2 @ 3 |
| Loose Muscatel, 2-crown, # lb. | 1 1/2 @ 2 |
| Sultanas, # lb. | 3 1/2 @ 3 3/4 |
| Seedless Muscatel, # lb. | 1 1/2 @ 2 |
| Dried Grapes, # lb. | 1 @ 1 1/2 |

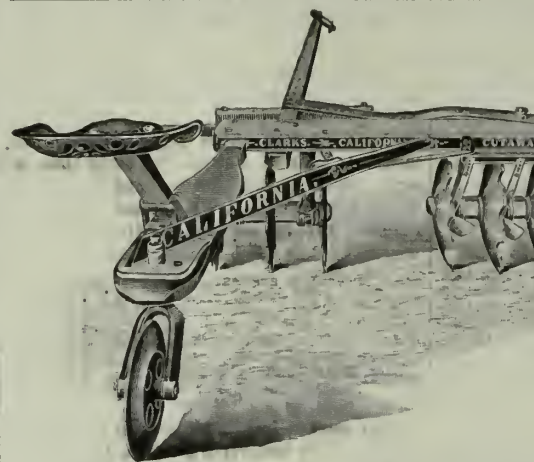
Citrus Fruits.

Oranges are higher, with arrivals light, and inquiry fairly active, especially for choice to select Navel, these receiving the most attention. The improvement in values for Seedlings was not marked. Tangerines were in such very light stock as to be hardly quotable. Lemons remained plentiful, and for other than choice to select the market was wholly devoid of firmness. Limes were in increased supply and market was easier.

DISSTON'S



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California Cutaway Rotary Reversible Orchard Plow.

INTENSE cultivation is the word. The California Cutaway leaves the land friable, aerated and thoroughly pulverized at ONE operation, all foul stuff being cut to pieces and mixed with the soil. Cuts 36 in. wide, 5 to 8 in. deep. Does the work of an ordinary plow, harrow and pulverizer, and at one-half the cost. The tool itself does not cost much.

Prices on Clark's Cutaway Reversible Disc Harrow GREATLY REDUCED. The Clark's Cutaway is 100% better and 25% cheaper than any other disc harrow. Write or call.

ALLISON, NEFF & CO.,

222 Mission Street, San Francisco, Cal.

| | |
|------------------------------|-------------|
| Oranges—Navel # box. | 1 50 @ 3 00 |
| St. Michaels, # box. | 1 50 @ 2 00 |
| Seedlings, # box. | 75 @ 1 50 |
| Lemons—Cal., select, # box. | 2 00 @ 2 25 |
| Cal., good to choice, # box. | 1 25 @ 1 75 |
| Cal., common to good, # box. | 75 @ 1 25 |
| Limes—Mexican, # box. | 5 00 @ 5 50 |
| Cal., small box. | 75 @ 1 25 |

Nuts.

Both Almonds and Walnuts are now offering in very light quantity, and market for best qualities inclines in favor of sellers. Peanuts are not in large supply, either domestic or Eastern, but quotable values show no improvement.

| | |
|--|---------------|
| California Almonds, paper shell, # lb. | 8 @ 9 |
| California Almonds, soft shell, # lb. | 6 @ 8 |
| California Almonds, hard shell, # lb. | 4 @ 4 1/2 |
| Walnuts White, paper shell, # lb. | 7 @ 8 |
| Walnuts White, soft shell, # lb. | 7 @ 8 |
| Walnuts White, Cal., standard, # lb. | 4 1/2 @ 5 1/2 |
| Chestnuts, Cal. Italian, # lb. | 8 @ 9 |
| Peanuts, Cal., fair to prime, # lb. | 4 @ 4 1/2 |
| Peanuts, Eastern hand-picked, # lb. | 5 @ 6 |
| Pine Nuts, # lb. | 7 @ 8 |

Produce Receipts.

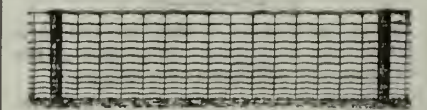
Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------|--------------------|----------------------|
| Flour, 4-sks. | 130,505 | 3,480,526 |
| Wheat, cts. | 155,157 | 8,586,958 |
| Barley, cts. | 83,882 | 4,049,851 |
| Oats, cts. | 14,150 | 504,434 |
| Corn, cts. | 10,300 | 242,713 |
| Rye, cts. | 1,095 | 30,143 |
| Beans, sks. | 8,808 | 496,789 |
| Potatoes, sks. | 33,549 | 836,727 |
| Onions, sks. | 1,593 | 86,173 |
| Hay, tons. | 1,833 | 96,943 |
| Wool, bales. | 21 | 46,468 |
| Hops, bales. | 21 | 7,826 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|----------------------|--------------------|----------------------|
| Flour, 4-sks. | 115,756 | 2,271,484 |
| Wheat, cts. | 122,924 | 8,412,083 |
| Barley, cts. | 60,763 | 2,815,764 |
| Oats, cts. | 770 | 12,543 |
| Corn, cts. | 411 | 31,357 |
| Beans, sks. | 1,883 | 266,740 |
| Hay, bales. | 1,080 | 58,681 |
| Wool, lbs. | 91,802 | 13,391,776 |
| Honey, cases. | 18 | 1,184,892 |
| Potatoes, pkgs. | 792 | 6,514 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at



THIS WAR TALK

caneled by Cuban troubles calls attention to our public defenses. Say, are your crops and pasture lots well fortified? Send us measurements and get our '98 prices. See our ad. in next issue.
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times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, March 9.—California dried fruits, steady. Especially firm for evaporated apples. Evaporated Apples, common, 5@8c per pound; prime wire tray, 8@c; wood dried prime, 8@c; choice, 8 1/2 @ 9c; fancy, 9 1/2 @ 10c. Prunes, 3 1/2 @ 4c per pound. Apricots, Royal, 5 1/2 @ 6c; Moorpark, 8 1/2 @ 10c. Peaches, unpeeled, 5@9c; peeled, 12@16c.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR WEEK ENDING FEBRUARY 22, 1898.

599,600.—GUN TURRETS—G. W. Dickie, S. F.
599,499.—FURNACE—H. S. Carr, Los Angeles, Cal.
599,628.—SHEET METAL PIPE—R. J. Norham, Los Angeles, Cal.
599,574.—BOOK REST—Betsey Sherman, Toledo, Wash.
599,647.—FRUIT DRIER—G. A. & B. G. Stevens, Salem, Or.
599,371.—BAND WHEELS—A. J. West, Aberdeen, Wash.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

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Frozen Orange Trees.

The Supreme Court having granted a rehearing in bank in the case of R. W. Pierce, plaintiff and respondent, vs. the Southern Pacific Company, defendant and appellant, which it had already once decided, by reversing the judgment of the superior court of San Bernardino, has now placed itself on record by sustaining its former opinion and remanding the case for trial to the court below. In 1891 Pierce shipped from Apopka, Fla., two carloads of orange trees to Gulick Bros., at Riverside. Owing to some severe washouts on its Sunset line, the Southern Pacific found it necessary to forward the orange trees over the Central Pacific, and the trees were destroyed by frost. Plaintiff brought suit and recovered judgment for \$9865 in San Bernardino. The Supreme Court reversed this judgment, because Superior Judge Campbell had erred in overruling the railroad's objection to proof of the market value of the trees at Riverside, instead of confining the inquiry to the cost or value of the trees at Apopka, as per contract, which, with the freight paid, was the true measure of damages. On the rehearing the railroad company insisted that it had proved a valid shipping contract exempting it from all liability, and Pierce contended that the rulings of the lower court with reference to damages were correct. The conclusion of the court in bank is that the contract, if valid, did not permit the corporation to forward the trees through Utah and Nevada. As to the invoice price of the shipment, there having been actually none made out at the time, it would mean the actual value of the trees at Apopka, adding thereto the freight paid, with interest on the whole amount.—Los Angeles Herald.

Pleasantries.

Miss Courtwright—What do you think of a man who will marry a woman for money. Mr. Spoomer—All I can say is that such a fellow must be hard up.—Cleveland Leader.

Bride—Counting your change, George? It has been an expensive trip, hasn't it? George—That's right. It looks as if this honeymoon would soon be on its last quarter—Puck.

Palmer—Did you say you couldn't arrest the fight of time? Johnston—No one can. Palmer—Well, this morning, when I was coming down town, I stopped a minute.—Up to Date.

"You certainly look better; you must have followed my advice, and had a change." "Yes, doctor; so I have." "Where did you go?" "I went to another physician."—Boston Courier.

Walker—I'm very much afraid my wife is going to have brain trouble. Ryder—What makes you think so? Walker—Last Sunday, when she returned from church, she repeated the text, and never said a word about what the other women had on.—Chicago News.

"Couldn't take him at any price," said the agent who was buying horses for the use of the mounted police. "It is all right for a policeman to interfere whenever he sees fit but won't do for this horse."—Indianapolis Journal.

"Now," said the attorney for the defense, "here is a skull. Can you tell us to what species it belongs?" "It's the skull of a lawyer," replied the expert witness. "How can you tell?" "By the cheek bones, here. They are much more prominent and of a harder substance than those of the ordinary skull."—North American.

Beware of Ointments for Catarrh That Contain Mercury,

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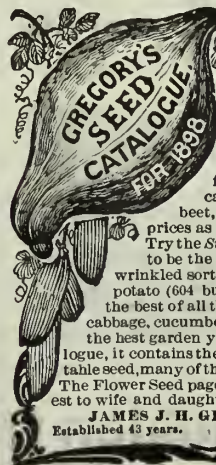
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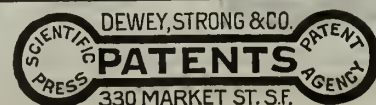
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IN

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A MANUAL OF PRACTICE WITH AND WITHOUT IRRIGATION, FOR SEMI-TROPICAL COUNTRIES.

By EDWARD J. WICKSON, A. M.

Professor of Agricultural Practice in the University of California; Author of "California Fruits and How to Grow Them;" President of the California State Floral Society; Horticultural Editor of the "Pacific Rural Press" of San Francisco, etc.

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- IV. Vegetable Soils of California.
- V. Garden Irrigation.
- VI. Garden Drainage in California.
- VII. Cultivation.
- VIII. Fertilization.
- IX. Garden Location and Arrangement.
- X. The Planting Season.
- XI. Propagation.
- XII. Asparagus.
- XIII. Artichokes.
- XIV. Beans.
- XV. Beet.
- XVI. Cabbage Family.
- XVII. Carrot, Parsnip, and Salsify.
- XVIII. Celery.
- XIX. Chicory.

Chapter.

- XX. Corn.
- XXI. Cucumber.
- XXII. Egg Plant.
- XXIII. Lettuce.
- XXIV. Melons.
- XXV. Onion Family.
- XXVI. Peas.
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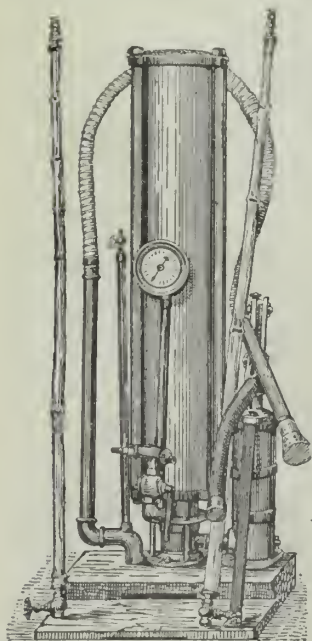
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 12.

SAN FRANCISCO, SATURDAY, MARCH 19, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

Alkali and Plant Growth.

One of the most conspicuous contributions of California investigators to agricultural science is to be found in the knowledge of the constitution and character of alkali soils and the amelioration which can transform them from barren wastes to productive areas. Prof. Hilgard of the University of California began the local study of alkali soils over twenty years ago, and has prosecuted it constantly since that date. His conclusions are cited as authoritative in all parts of the world, and his methods of investigation and experimentation are now being followed over the vast arid regions of Asia and Africa by the Governments owning such waste lands, in the hope of permanently reclaiming them. Intimations of these facts have already been given from time to time in our columns.

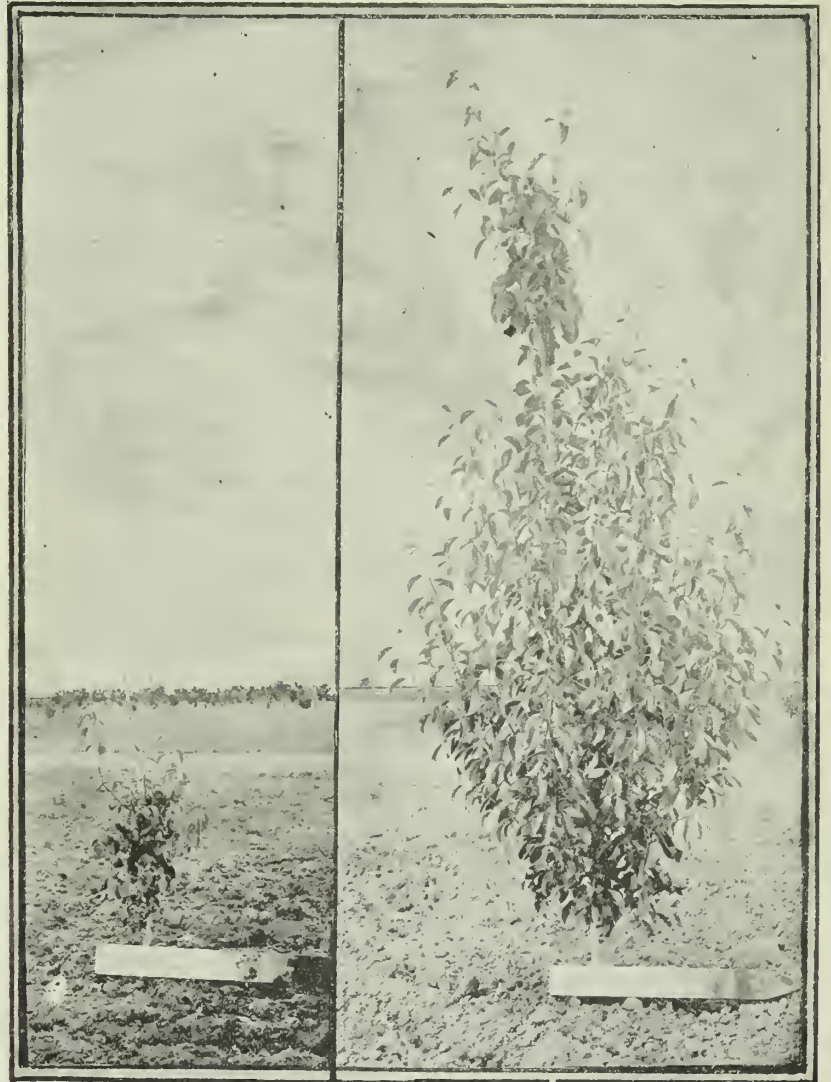
Prof. Hilgard has shown that the worst kind of alkali, which is largely composed of carbonate of soda, can be rendered innocuous by the use of gypsum. Since this recommendation was made the use of gypsum has become quite general in alkaline regions. Quarries have been opened, grinding plants established and a large commercial product of gypsum is now to be included among the productions of the State. The engravings on this page are from photographs, and show quite clearly the effect of the use of gypsum as an antidote for what is known as "black alkali" or carbonate of soda. In two main directions has the gypsum been chiefly used. One is for neutralizing the alkali in the immediate place where a tree is to be planted. If the amount of alkali is not too large, this method renders it possible to start trees successfully by preventing the accumulation of alkali at the surface from killing the young tree by corrosion at the root crown. Many times this protection at the start will be all the young tree will need. Where the amount of alkali is greater, more gypsum is naturally needed. One of the engravings on this page shows on the left a pear tree struggling with alkali, and on the right a pear tree on the same soil

which has been reclaimed with gypsum, the alkali being so neutralized as to lose its corrosive power.

The other engraving gives a striking view of results attained at one of the University experiment stations in growing grain on alkali soil with and without treatment with gypsum. The photograph gives the relative height and appearance of the several samples. At one end are also specimens of wheat from a medium alkali spot, where the grain has just been able to grow to a few inches, while on adjoining plots it had attained a height of several feet.

The Quarantine Line.

In the *RURAL* of March 5th we gave a letter from Hon. James Wilson, Secretary of Agriculture, declining to admit the movement of cattle northward across the Texas fever quarantine line, which extends from the Golden Gate easterly to the eastern line of the Sierra Nevada and along that line southerly to Mexico. The enforcement of this line prevents the movement of stock from the arid districts northward and eastward to places where there is abundant



URBANISTE PEAR, on Alkali.

BEURRE D'AMALIS, on Weak Alkali.

PEARS FIVE YEARS OLD GROWING ON ALKALI SOIL.



On Medium Alkali.

Partly Reclaimed Alkali Soil.

On Fully Reclaimed Alkali Soil.

WHEAT AND BARLEY GRAIN ON ALKALI LAND TREATED WITH GYPSUM.

feed and stock in demand. The leading California cattlemen are seriously affected and hope to induce Secretary Wilson to make arrangement by which the cattle may be saved. Senator Stewart of Nevada and Governor Budd of California have both taken up the matter, and Tuesday evening J. R. Hebborn, president of the Cattlemen's Association of Monterey, left for Washington on the errand of urgency. He represents the stockmen of Stanislaus, Merced, Monterey, Santa Cruz, San Benito, San Luis Obispo, Tulare, Kings and adjoining counties most particularly, and his object is to have the Secretary of Agriculture move the quarantine line so far south as to permit the cattlemen of the great central district of the State to send their stock to the grassy mountains of the north and the verdant ranges of Nevada before they shall become so weak that transportation will be impossible. At present the northern counties of the State and Nevada, which have an abundance of pasture and a sparsity of cattle, are thus completely cut off for grazing purposes from over 100,000 head of healthy California stock, which must perish if immediate relief be not obtained.

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ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, March 19, 1898.

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The Week.

Weather and Crops.

There have been showers here and there during the week, amounting in some places to quite a respectable rain. If there had been previously a deep soaking of the soil, this week's rains would have carried along growth for quite a time. The present situation, however, is that over wide areas of the State there has not been this winter any connection between what farmers call the "top and bottom water," and for that reason moisture from light rains is speedily dissipated. Still the figures are comforting, such as they are, and, to a certain extent and for some crops, will do much good, even though they do not ensure production.

The moister lands of central California and much of the interior valley region of the upper half of the State are in good shape so far and only need continuation of light rains to pull through fair products.

During the first of the week some Klondike weather seems to have lost its compass and driven through the Sacramento and San Joaquin valley, as well as through smaller valleys nearer the coast. It is thought that much harm has been done in some localities to the young fruit, which is now in its most tender size. No doubt some losses have occurred, but as frost reports are apt to err on the side of exaggeration, it is hoped that injury may not be so great as now reported.

The following data for the week ending 5 A. M., Wednesday, Mar. 16, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week... | Total Seasonal Rainfall to Date..... | Total Seasonal Rainfall Last Year to Same Date..... | Average Seasonal Rainfall to Date..... | Minimum Temperature for the Week..... | Maximum Temperature for the Week..... |
|----------------------|--------------------------------|--------------------------------------|---|--|---------------------------------------|---------------------------------------|
| Eureka..... | 1.32 | 28.05 | 41.62 | 34.96 | 32 | 52 |
| Red Bluff..... | 0.01 | 12.08 | 22.65 | 20.44 | 32 | 76 |
| Sacramento..... | .00 | 8.55 | 15.49 | 16.04 | 33 | 74 |
| San Francisco..... | 0.04 | 7.49 | 20.68 | 18.92 | 41 | 74 |
| Fresno..... | 0.24 | 3.70 | 9.25 | 7.78 | 34 | 76 |
| San Luis Obispo..... | 0.22 | 5.37 | 19.84 | ..... | 36 | 74 |
| Los Angeles..... | 0.50 | 4.80 | 16.08 | 13.95 | 40 | 72 |
| San Diego..... | 0.48 | 3.66 | 10.91 | 8.77 | 38 | 66 |
| Yuma..... | 0.38 | 1.65 | 5.31 | 2.81 | 36 | 80 |

State Board of Agriculture.

On Monday Mr. A. B. Spreckels was chosen president of the State Board of Agriculture, at the annual meeting of the Board, held in Sacramento. Mr. Spreckels was nominated by Director Boggs, and, there being no other nominations, he was elected unanimously. In accepting, Mr. Spreckels promised to use his best efforts for the success of the society, and stated that he would give the position the requisite attention, and hoped to receive the able support of the members. The thanks of the Board were extended to the retiring president, C. M. Chase, for the efficiency and faithfulness with which

he conducted the affairs of the society during the past three years, having at all times been fair and impartial in all his rulings and dealings with the Board. J. W. Wilson was selected as superintendent of the park, and W. P. Mathews superintendent of the pavilion.

The Produce Market.

Weather speculation continues to be the first interest in the local produce market and values in pretty much all lines, excepting dried fruit, are more or less affected by hopes and fears as related to the coming season's crops. Wheat, for example, is held on a dry season view, and since the London market as yet takes no notice of the fact, holders and shippers are apart and no business is doing. Barley is strong on a weather basis, and oats are going upward in sympathy. Hay is very stiff and is quotable at \$22 per ton with upward tendency.

In the live stock market beef and mutton are very strong and there is a prospect of advance. Hogs are steady with large receipts. The hide market is weaker for some unexplained reason.

In the dried fruit market the only positive demand is for small prunes, apples and pitted plums and pears, and of these there are almost no stocks. For peaches, apricots and large prunes, of which there are relatively large quantities pressing upon the market, there is little inquiry or disposition to buy. It is estimated by the local trade that, including raisins, there remains in first or second hands something like 25,000,000 or 30,000,000 pounds of the 1897 crop of dried fruit. For the less desirable part of this large stock, the chances of a clean-up are light; that is, this is the assertion of dealers in the fruit trade.

The downward movement in eggs and dairy products has ceased, and for the former there is a slight tendency upward. Butter is steady at quotations.

For further detailed report, see our market page.

Suggestions Invited.

The State Board of Trade will receive gratefully and consider thoughtfully written suggestions as to how best to exhibit the products of California at the World's International Exposition to be held in Paris in the year 1900, with the view of extending the markets for California products. Communications in response to this may be addressed to the California State Board of Trade, San Francisco. Suggestions are especially solicited from the producers of the State. It is to be remembered that the exposition is to be distinctively a market-seeking proposition.

Bud and Blossom Carnival.

San Jose has prepared for a unique hospitality, from which other orchard towns may take a hint. It is called a bud and blossom festival, and it has been decided to invite visitors to that city and county on Saturday, March 26th, to see the magnificence of thousands of acres of blooming orchards. Prune buds are further advanced than usual and by March 26th orchards will be in full blossom. Excursion trains will be run from San Francisco and other bay points on Saturday, March 26th, and it is expected thousands of visitors will be present. Carriages will be at the depot to meet all trains and visitors will be driven through the orchards. Luncheon will be supplied and the guests otherwise entertained. Next year it is proposed to make great preparations for a grand bud and blossom fete.

Fruit Growers' Convention at the South.

At the last fruit growers' convention at Sacramento the State Board of Horticulture was requested to make provisions for spring conventions at the south. This has been done and Secretary Le-long has issued a circular inviting fruit growers to meet under the auspices of the State Board of Horticulture in two sections—at Los Angeles April 11th and 12th, and at Riverside April 14th and 15th, 1898. A cordial invitation is extended to all fruit growers, shippers, packers, nurserymen, and others interested in horticulture and kindred pursuits, to be present and take part in its proceedings, and it is hoped that every branch of the industry will be well represented. Eminent horticulturists will present papers during the session on subjects that are deemed of the utmost importance to the fruit industry in general, and all interested should attend the convention. The State Association of County Horticultural Commissioners will also hold sessions during the week.

Suspension of An Old Fruit Firm.

The fruit firm of Luke G. Sresovich & Co., one of the most extensive and oldest houses in that line on this coast, finds itself in financial difficulties and was obliged to suspend on Monday, owing to its inability to meet its obligations.

Notes From the South.

TO THE EDITOR:—In the generosity of his heart old Jupiter Pluvius relented for a few hours last week, and allowed the elements to precipitate a little moisture south of Tehachapi. To be sure, it was small in quantity and short in duration, but still sufficient to cause the barley to "stand up" and afford the grass to grow and the hills to take on an intenser hue of green. The tension of fear as to drouth was also perceptibly lessened, and as a result a much better feeling prevails. To us of the south rain means much—it is literally the dividing line between profitable and unprofitable farming, the account being balanced in favor of a good rainfall. Verily, "man proposes and God disposes." The unusual high price of grain last year caused many to rent land for wheat farming, and the demand for idle land being brisk, prices were correspondingly high, until they reached a figure much above the average. In many cases renters were called upon to pay in advance. Result: On account of the scant rainfall many have been unable to plant at all. At this late date it is doubtful if many will plant at all, even though there should yet fall a goodly rain. While grain farming is thus sadly retarded, and the stock interests must necessarily suffer more or less, it does not follow that orcharding will suffer severely, particularly if people will only soak their land thoroughly with irrigation water immediately, while the streams and available supplies are ample. How is this best accomplished? By thoroughly working the soil, rendering it minutely divided, yet compact, so that it will absorb and hold water much like a sponge. Then, when the rainy season is at an end, if we break up the soil next to the atmosphere—that is, the top soil—we shall thereby conserve the moisture by lessening co-operation. This little fact tells the prudent grower to turn on the irrigating water and thoroughly cultivate his land preparatory to withstand a long dry summer. To be sure, it also tells the same story to the dull and slovenly, the indifferent and negligent, but somehow it loses its force on them, and a damaged orchard and an unprofitable crop is the inevitable result. Somehow, this world seems to be for the bright and apt, the frugal and industrious—in the language of the street, the other fellows often "get left." Intensive horticulture and agriculture is no exception to this rule.

On Thursday, March 10th, there was held in the Los Angeles Chamber of Commerce rooms an interesting meeting of orange growers, called for the purpose of discussing the present unsatisfactory condition of the markets for citrus fruits and to devise ways and means of securing a reduction of transportation charges to Eastern markets. The meeting was well attended, every citrus-growing locality being represented. The Hon. E. W. Holmes of Riverside and R. H. Young of San Diego were respectively elected chairman and secretary of the meeting. It was not long after the discussion was fairly opened before it was demonstrated that the orange market was in a rather bad way from the growers' point of view. Budded fruit was commanding only low prices, while seedlings were practically a drug on the market. It will not be necessary here to go into commercial details and figures. Suffice it to say that, under present prevailing conditions, the outlook for the producers is anything but satisfactory. The increase in production has been large during the past few years, as many new orchards are constantly coming into full bearing. This keen competition has resulted in "the survival of the fittest," and the fact is being constantly brought home to the orange grower that only the very best fruit will bring profitable returns. It is within the pale of truth to say that there is always a glut of poor fruit on the markets, and in the face of that fact it is simply folly to grow anything but a prime article that will bear the closest scrutiny.

Already the initial steps have been taken to make the coming Fruit Growers' Convention, to be held in this city under the auspices of the State Board of Horticulture, a success. An interesting programme has been provided, and, if present indications count for anything, the meeting will certainly be worth attending.

Advices from Santa Barbara are to the effect that the poultry and dog show held there last week was a success financially and otherwise. I am glad of it. The breeders and fanciers to the north of Los Angeles have been doing some good work in a quiet way, and have awakened a keen interest in thoroughbred birds. But think of barking dogs and crowing cocks all in one room at the same time! The experience must have been jarring to the serenity and placid life of even cultured and cosmopolitan Santa Barbara.

The organization of the deciduous fruit growers under A. R. Sprague is making good progress, and nearly every locality now has its local organization. The plan is much the same as the citrus fruit exchanges, and will be carried on in much the same way. The work of organization is still progressing and will undoubtedly result in lasting benefits to the farmers in marketing their crops next fall.

HENRY W. KRUCKEBERG.

Los Angeles, March 12, 1898.

AGRICULTURAL REVIEW.

CALIFORNIA.

Colusa.

BEET EXPERIMENT IN COLUSA.—Sugar beets are to be planted in quantities sufficient to make a good test, at least, in the vicinity of Colusa. We are satisfied that this district of country is well adapted to the growth of the beet and that it is to be the future industry here. * * * Much will depend on what is done this year. There has not been rain enough to make success certain anywhere, and we hope that all who are in a condition to irrigate will flood the land and then plant. It will pay to pump the water from the river to do it. Of course we may have more rain, but those who can and do irrigate will grow the better beet. And just here is one great advantage of the Colusa district. A big pump on a barge will water enough land to supply a big factory. The beet districts of the State are not so well off as we are now, on account of rain, and, if we can make the beets grow, it will be a feather in our caps. They may grow some beets at Watsonville, but Spreckels' big factory at Salinas will be very short unless we have much more rain, and they have had hardly any rain in the southern districts. All around it is Colusa's opportunity. —Colusa Sun.

Humboldt.

DAIRY CONDITIONS.—Dairymen report that about one-third more milk is being taken to the creameries than at any previous year at the same date, says the *Independent*. The cause for this unprecedented lacteal supply is due to the fact that grass is in a most desirable state of plentifulness and in excellent condition. —Watchman.

EXPERIENCE IN UNDER-DRAINING.—The few farms on Arcata bottom that have used tiling to under-drain their land have found the experiment so successful that such work is increasing with the passing of each year, says the *Union*. Land owners about the margin of the bay, as well as owners of reclaimed land, are most interested, for it is upon such lands that water lies until it destroys the grass or renders the ground unfit for cultivation. An underground drain is a complete remedy for this drawback to getting the full benefit of low flat land, and will put such land in condition to be cultivated as early in the season as undrained level land higher up on the bottom. John Cochrane, Wm. Spalletta and others have been laying tiling, and they are so well satisfied with the results that they will continue it from year to year.

Los Angeles.

NUT GROWERS' ASSOCIATION.—The Walnut Growers' Association met at Rivera Tuesday, closed up the business for the past year and made their final settlement. The labor of the Association has been in every way highly satisfactory, and their report shows that the expense of carrying on the business has been scarcely more than 1 per cent. There are about 150 members, and the amount of sales has been nearly \$1000 to the member, and it must be remembered that last year was an off year in the walnut crop. —Whittier letter.

ORANGE SITUATION.—The packing houses are now generally running at full capacity and a great many oranges are being sent East. Secretary Dreher tells us the shipments of the exchange are going forward at a good rate and that fair prices are received as a rule for Navel, but Seedlings are in hard luck. The growers who have sold at an agreed price are probably the happiest of any, as there is practically no opportunity of selling at any price now, and the probability of the fruit deteriorating is so great that all are anxious to unload. —Pomona Times.

The scare about the orange crop is over. The railroads are having all they can do to supply refrigerator cars, but there is no shortage. Fortunately for the coast, frost-bitten oranges are being thrown away and only ripe, sound fruit is being shipped. The freight rates are a trifle high, say the shippers, and a "trifle low," say the transportation companies, but so far this season there has been no big fight or any large bundle of complaints from the shippers. —Los Angeles Times.

Mendocino.

GOOD PRICES FOR MUTTON SHEEP.—C. P. Smith has received a telephone message from a wholesale butcher firm in San Francisco authorizing him to purchase mutton sheep for them and pay therefor 9 cents a pound. The future of sheep raising in this county certainly looks flattering, notwithstanding the calamity howls of our esteemed Popocratic contemporary. —Ukiah Press.

Monterey.

CONTRACTOR L. U. GRANT, with his large force of men, has made wonderful changes in the appearance of the residence portion of the Spreckels sugar factory site in the past six weeks. What was an alfalfa patch has been transformed into a beautiful little village. About forty residences of all designs of architecture now grace this spot. Some of the houses have been plastered and are ready for the paper-hanger. Two lots are set aside for each house, which will allow ample room for gardens and outbuildings. The cost of each house was about \$800. —Salinas Letter.

Napa.

FRUIT TREES to plant 1000 acres has been sold by one Napa county firm this season, says the *Calistogian*.

CREAMERY AT ST. HELENA.—Through the enterprise of Taplin Bros., well known dairymen, St. Helena is to have a creamery. An 8 H. P. engine, with other necessary machinery for a first-class plant, is being set up in a stone building at the Taplin place. While the Taplins expect to operate the new butter factory largely from the product of their own cows, they will take all the outside milk offered.

Orange.

LIGHT BEET PLANTING.—There will be few beets sown this year, and very little working of the sugar factories, unless there are 2 or 3 inches of rain during the remainder of this month. J. Ross Clark, the head of the Alamitos beet sugar factory, says that while he does not take a pessimistic view and thinks there is plenty of time for rain, yet he thinks that unless it does come this month, to the extent of 2 inches, there will be little or no crop. "The trouble has been that planters have not provided any method of irrigating the crops, or rather the land," Mr. Clark is quoted as saying in a Los Angeles paper. "All that would be necessary to insure a crop, even in a dry year, would be to give the land one good soaking before seeding. In all of the beet regions the entire dependence of the farmers has been put in nature, and she is feminine enough to be exceedingly disappointing occasionally. It is probable that the lesson of this year will be of great resultant good, for in most of the beet country artesian water is readily had, and the farmers before next season will be likely to have a source of supply." Irrigating for beets will probably be quite a novel idea to many of the farmers.

The Anaheim *Gazette* is advocating a cannery project.

San Benito.

ABOUT 4000 tons of hay are in the Hollister warehouses. Most of it is owned by the warehouse companies.

Santa Clara.

A Los Gatos letter declares that the Los Gatos creamery will be operated as usual this season—reports to the contrary notwithstanding.

SPRECKELS' SOAP LAKE PURCHASE.—The Gilroy *Gazette* gives the following particulars of the purchase by Spreckels of the

Soap Lake tract of 9900 acres, long owned by Miller & Lux: "Mr. Spreckels told a *Gazette* reporter that an effort would be made to get several hundred acres of the land planted in beets this year. Mr. Spreckels has announced his intention of putting the entire tract in condition to grow beets and this will require a large expenditure of money and labor. Just what other improvements will be made has not been made public. The hill land of the ranch has been included in the purchase and \$45 per acre was the consideration for the entire tract. Whether Mr. Spreckels will mill the beet product of this tract at his Salinas and Watsonville factories or build a new factory near Gilroy is not stated; but the Gilroy people are very hopeful that the last named plan will be carried out.

Solano.

THE MUSHROOM SUPPLY.—W. B. Ruble has shipped large quantities of mushrooms to the San Francisco markets during the past few weeks. The rich soil of Brannan Island grows them in large quantities and Will has been enjoying a Klondike income in consequence. —Rio Vista News.

Sonoma.

A BIG CHICKEN RANCH.—Harrison Mechem of Stony Point was a well-known visitor in town Thursday. The past few years Mr. Mechem has gone quite extensively into the chicken business and now is the heaviest shipper of eggs to the San Francisco markets in the State. He gathers 2300 eggs a day on his big ranch near Stony Point, and feeds over 4000 hens every night and morning. —Democrat.

Sutter.

THE SUGAR BEET INDUSTRY.—The town of Vernon and vicinity have taken hold of the sugar beet matter in earnest and this season there will be 500 acres or more planted there. Messrs. Sage & Raffe, agents for the California Sugar Beet and Refining Company, have been doing considerable work in that vicinity and either rented or secured the promise of planting several large tracts. On Supervisor John Burns' place 150 acres have been already plowed, and on the W. G. Brown place about 200 acres will also be cultivated. On the Hoover farm across the river from Vernon a big force of men and teams are at work plowing 300 acres and in a few weeks planting of the beet seed will commence. The company offers \$4.50 per ton on the river bank for good beets. —Sutter Farmer.

Tulare.

FRUIT OUTPUT.—The Tulare *Register* gives the following report of the fruit shipments of Tulare county, crop of 1897:

| | Cars. |
|--|-------|
| Wine grapes..... | 70 |
| Green fruit to canneries..... | 12 |
| Green fruit sent East..... | 103 |
| Dried fruit and raisins..... | 73 |
| Sent to packing houses..... | 25 |
| Sent out by way of Visalia, about..... | 25 |
| Total..... | 308 |

Seventy cars of wine grapes would make business for a fair winery here, instead of sending out our stuff in boxes and bringing it back in barrels, remarks the *Register*.

The "Salvation" Colony at Soledad.

TO THE EDITOR:—There are two items published in this week's Salinas *Index* that should interest those who are making a study of this colony. One is that Major W. W. Winchell "is anxious to secure the services of fifteen sober, trustworthy men to plow and handle scrapers, to whom \$1 per day and board will be paid." One is tempted to ask: "Where are the Salvationists who were so desirous for work in the country?"

The second item refers to the appearance of Hon. L. R. Ellert, Major Winchell, G. A. Squires and a local attorney before the county Board of Supervisors to beg an appropriation of \$1000 from the county taxes, "to be used in advertising," "to induce immigration and to develop the colony" founded by the Salvation Army with so much flourish of trumpets. Here it seems pertinent to inquire: "Where are the thousands of land-hungry Salvationists who only wanted the chance given them to rush after the modern Moses to this new land of Canaan?"

I am glad to say our District Attorney interposed on behalf of the too long-suffering farmer taxpayers.

EDWARD BERWICK.

Pacific Grove, March 10, 1898.

HORTICULTURE.

Investigation of the Fruit Districts of the Pacific Coast.

In accordance with intimations received from Washington some weeks ago, the inquiry into the pomology of the Pacific coast has been duly provided for. A circular issued from Washington on March 10 is as follows:

The division of pomology of the United States Department of Agriculture has undertaken to investigate the fruit producing districts of Arizona, California, Nevada, Oregon, Washington and Idaho, and to indicate the boundaries thereof as clearly as may be found practicable, and to note the pomological influence of latitude, slopes, soils, exposure and moisture conditions, as shown by the experience of fruit growers within the division of country included in this inquiry. To give the effort special definiteness and value, it is desirable to collect the fullest possible data regarding the local adaptation of different districts and localities to the satisfactory production of the different kinds of fruit; the varieties of these fruits which are most productive and profitable when grown for market, and which are best adapted for dessert or culinary quality if grown for home use, and which are, therefore, specially worthy of recommendation in each locality or district.

As this is an undertaking of great difficulty, in view of the wonderful diversity of local conditions existing on the Pacific coast, and as satisfactory results are only attainable through the aid and co-operation of a large number of local observers, I

most earnestly invite your cordial interest and assistance. Every fact reached by careful local observation will be of value; consequently a reply is earnestly requested from everyone who receives this circular, even though his experience may cover but a very few of the questions propounded.

For the purpose of carrying out the work of this proposed undertaking, Prof. E. J. Wickson of Berkeley, Cal., has been appointed special agent of this division, and to him all the details of the work are intrusted. A copy of the report will be sent to all who furnish information.

Approved: G. B. BRACKETT, Pomologist.
JAMES WILSON, Secretary of Agriculture.

CIRCULAR BY THE SPECIAL AGENT.

The following circular and schedule has been prepared and will be sent to fruit growers in the States above mentioned:

BERKELEY, CAL., March 14, 1898.

DEAR SIR:—In undertaking the "Investigation of the fruit districts of the Pacific Coast," as authorized and outlined in the accompanying circular by the Pomologist of the United States Department of Agriculture, I appeal to you for assistance in making this investigation accurate, adequate, and thoroughly representative of our pomological adaptations, resources, and achievements—all of which are but imperfectly known and understood. A systematic inquiry of this kind has never been undertaken in this region, and the general interest and participation of fruit growers in this effort will insure a report of wide pomological importance. You are, therefore, requested to reply to any or all of the questions submitted, as your experience or observation warrants, and also to add other information which seems to you pertinent. I shall be glad to receive copies of any published descriptions of your locality or district which you consider true as to natural character and adaptations. The inclosed return envelope will convey both written and printed matter without payment of postage. I will be thankful also for names and addresses of other fruit growers to whom this circular may be sent for the promotion of the purposes in view.

E. J. WICKSON, Special Agent.

SCHEDULE OF INQUIRIES.

- (1) Name of district, valley, or neighborhood for which you report.
- (2) Direction and distance from some town, river landing, or railway station.
- (3) About how many acres of fruit lands are included?
- (4) What is the elevation above sea-level and above river-bottom or low plain?
- (5) State any influences upon the favorable growth of fruits in your region which may be attributed to adjacent mountains or bodies of water or other features of your environment.
- (6) What elevations above local river-bottom, what exposures, and what kinds of soil do you find best for the different fruits which are grown in your district?
- (7) Which fruits do you grow with irrigation; how many irrigations in the season, and in what months?
- (8) About how much water do you aim to use per acre at each irrigation?
- (9) What is your usual rainfall?
- (10) What, if anything, do you find it profitable to grow between bearing fruit trees?
- (11) For clean cultivation, how many plowings and how many cultivations do you give in the year?
- (12) State any other facts of your observation or experience which you consider important in connection with any of the foregoing questions.
- (13) *Adaptation of Varieties.*—In order to characterize more definitely the range of the different fruits, you are requested to name those varieties of the several kinds of fruits which you consider on the whole most satisfactory either for market or home use in your orchard or in the locality for which you report. Please name the varieties which, with your present knowledge and experience, you would choose if you were replanting your orchard.

Following this question an opportunity is given on the blank for naming the preferred varieties in tabular form. It is hoped that readers of the *RURAL* in all parts of the coast will take active interest in this inquiry. Suitable blanks will be sent to all who will apply for them by postal card to Prof. Wickson at Berkeley, Cal. Information on other pertinent matters which are not included in the formal inquiries will be gladly received.

Olives and Olive Culture.

By PROF. A. P. HAYNE of the University of California at the Redlands Horticultural Club.

In a short paper it is absolutely impossible to treat the subject of olive culture with any degree of completeness. Hence in this short paper I shall endeavor to answer a few of the more common questions that are daily received by the College of Agriculture.

Do Olives Pay?—The first and most important question asked is "Does it pay to grow olives?" To this question I answer "Yes and no." Under some circumstances it does. In many cases it does not. Under the present organization and execution of our

commercial and pure food laws, the planting of olives for the manufacture of oil I do not think will pay. Manufacturing the product into pickles, on the other hand, I honestly believe will pay, and pay well. The reason that olive-oil making will not pay is due to the fact that the refuse products of the cotton gin can be sold in our markets as pure California olive oil. The manufacturer of cottonseed oil can place his products upon the markets for less than half of what it costs the olive grower to do the same. Under these circumstances I think common sense shows us that we have no hope. When the day comes that the National Government passes a law similar to the oleomargarine law in regard to olives, then we may hope to make money by manufacturing olive oil. At one stroke of the pen the Governments of the world saved the dairy industry—not by preventing the sale of oleomargarine, but by compelling the dealers in lard-butter to "sail under their own colors." The day that the cottonseed oil manufacturer sails under his own colors, that day will see the owners of olive-oil mills in good financial circumstances. Of course, there will always be a homeopathic market for good, sound olive oil, but it must be remembered that this market will remain homeopathic as long as the laws remain as they are, and the prospect for a change is very remote.

The Pickle Outlook.—In the case of pickles, on the other hand, the prospects are very bright indeed. No expensive machinery or plants are required. It will pay you to pickle a gallon or a carload; and in spite of the large area to-day planted in olives, it is a fact that the supply is less than the demand in California alone. This leaves us the unlimited market of all the Americas and the islands.

Of course, as in the case of all newly manufactured articles, some time is required to properly organize the market. A certain amount of advertising must be done. People do not readily take to an article of food that they know nothing of; and, with the majority of the people of America, they know nothing of the ripe, pickled olives. Here let me call your attention to the difference between the ripe pickled olive and the green pickled olive. You are not in the habit of eating green peaches or apricots as a steady article of food. Is there any more reason why you should make an exception in the case of the green olive? The green peach or apricot is fully as digestible, if not more so, than the green olive. Our market, however, is accustomed to green olives, and it takes a certain amount of education for it to acquire the habit of eating ripe olives. It is a fact that a person who has eaten ripe olives seven times consecutively will grow to like them. What needs to be done is to cause the 100,000,000 of people of the American continent to eat these ripe olives seven times and to tell them where they can get more. At present the consumer does not know to whom to apply for ripe pickles, nor does the producer know where he can dispose of his crops. This must be remedied, and it rests with you, with the Farmers' Club, with the local and combined exchanges, to bring this about. You are more vitally interested in disposing of your crops than the consumer is in buying them. The work of market organization then rests with you.

Good Prospects for a Good Product.—When I say that there is a good demand for ripe pickled olives, I want it very distinctly understood that I mean properly cured, sound olives. Many of the reported failures to dispose of crops of ripe olives that have been investigated by myself and others have proved to be due to the wretched quality of the samples offered for sale. The work of curing the olive was not done properly. Sufficient care was not exercised.

I know that every one of you here who pickles olives is fully convinced that his product has been properly cared for and is considerably better than his neighbor's. This is a weakness of human nature that you find in every country and in every pursuit. Of the quality of the olive then the producer cannot be the sole judge. It is the market alone which can judge finally of the quality. The greatest difficulty encountered is the innate carelessness of mankind. Womankind are nearly as bad, but not quite, and you will find the rule to be that many of the best pickles are put up by women.

Intelligence Required.—Another stumbling block in the way of the pickler of olives is a want of thoroughly appreciating what he is trying to do; what the objects of pickling are. There is a pernicious desire on the part of almost all to have a thumb-and-screw rule—a recipe by which he may be enabled to eliminate the factor of common sense from the problem. Any one who imagines that common sense can be eliminated from the problem had better plant potatoes and leave olive culture for him who will take the trouble to find out what he is trying to do. You do not find a person going into the manufacture of steamships, calicoes or clothespins without having first become familiar with the requirements of the case, but you do find the farmer attempting to manufacture articles without the slightest idea of the many problems that complicate the process.

I have frequently been asked "how to pickle olives." I have mailed a thirty-page pamphlet giving the most important explanations deemed necessary. By return mail, usually, came a letter saying,

"Oh, this is too long. We have no time for any such thing as that. Give us a page recipe." Now, ladies and gentlemen, that is the kind of people who fail, and it is noteworthy that the people who do fail manage to let the fact become known more vociferously than those who succeed. You would be astonished at the number of people who do succeed, and of whom you hear nothing. It is certainly a fact that in California we produce the finest raw material in this line in the world. It is also a fact that some of this is put upon the market in a worse condition than is elsewhere found. Whose fault is it?

How Much Will Olives Pay?—Coming back to the question, "Do olives pay, and if so, how much?" They do pay when properly handled, and they pay handsomely when all the conditions are fulfilled. Just how much they will pay depends entirely upon the grower and manufacturer. I know of certain cases where ripe Missions have been sold for as much as \$2 a gallon. I was offered the other day in San Francisco thirty barrels at \$1.60 per barrel. Under these circumstances how is it possible to fix a limit to the profit? The essentials in olive culture, as in any line of agriculture or horticulture, is the proper attention to culture. Who is to be the judge of what is proper and what is not? Each person establishes his own criterion and is firmly convinced that the other man is wrong. Whatever be his methods, he must have the soil in proper condition, the tree properly pruned, and the tree must be so cared for that it will produce its maximum size and quality of fruit. Accomplish this as you may, but accomplish it. Then comes the manufacture. The raw material must be properly handled. Not a single olive can be bruised. If any are bruised, all the previous or subsequent labor counts for naught.

Varieties.—In the selection of varieties for ripe pickles only such should be chosen as will give an olive which is the size of a large Mission. I take the Mission as a standard of size for the reason that it is so well known. Anything larger than the Mission is just as good; anything smaller has little or no market value, though I will say this, that for home consumption some of the finest pickles in the world are made from the smallest varieties. But the market requires a larger olive, hence it is that after grading a crop the smaller grades can be used for home consumption, the larger ones sold; and I look forward with confidence to the time when the ripe olive will replace meat upon our tables. I know of whole populations who are able to get meat only once a week at most. They can get ripe olives, however, and they flourish and grow fat upon them. Think, then, of the future of the olive when meat is partially driven from our tables. The nourishing value of the olive is far greater than that of beefsteak; it is just as readily digested. If it is properly put up it is preferred by many.

In closing, then, let me say that instead of feeling discouraged about olive culture you should feel quite encouraged. Recognizing the fact that there is no "Easy street" in agriculture (or anything else, for that matter), and considering the overcrowded condition of the markets in many other branches of agriculture, the keen competition that must be met from all parts of the world, you will readily see that the future for olive culture is almost unlimited.

Pruning the Moorpark.

"Orchardist" writes for the *Saratoga Item* that how to get a crop of Moorpark every year has been the study of every fruit grower who has that variety of apricot. Every close observer has noticed that whenever he grafted over into other varieties or to prunes, that, if he left a branch, in nearly every instance that limb bore full that season and following seasons so long as it remained on the tree. Some of the large growers in Kern and Tulare counties have adopted the following plan and secure a crop every year:

The trees are cut to 15 inches when set out and the four top buds allowed to grow. The next year these four sprouts are cut back to 1 foot and two buds left to each branch, and the two following years no pruning is done. The fifth spring there are eight branches growing out of the top of the first year's growth. This year the tree is topped and on opposite sides one of the two branches is sawed off close to the crotch, leaving six branches. Four to ten sprouts will come out at each place. Care is taken to leave one of the best at 6 inches in length and the remainder are brushed off. The sixth spring this is repeated on the other sides, leaving four branches. The seventh year the remaining branch is cut off that was left the fifth year, and a sprout left to grow in its place. Now, these two branches will have one sprout two years old and one four, growing. This year the older sprout will produce a large crop. The eighth year the two remaining large limbs are removed and a new sprout started. The ninth year the two oldest sprouts are removed, and the same process repeated year after year; and by so doing there is no bearing wood over four years old, and in each case the tops are not taken off until the second year. In this valley the larger portion of Moorpark have a light crop. If one-third or one-half of the old wood is taken off after blooming, later blooms will be forced out, and three or four

weeks later the trees will bloom again and produce a very good crop; whereas, if some of the top is not taken out, but few blooms will appear and mature.

FLORIST AND GARDENER.

Musings on the Mole.

Notions about the mole are various and observations upon its habits rather rare. Adeline Knapp writes for the *Chronicle* some things about the mole which will be new to some of our horticultural readers.

The Mole in Sight.—As I emerged the other day from a deep canyon I caught a glimpse of some little burrowing animal disappearing into the mouth of his nest in a sunny bank. I paused to examine the opening, and presently a soft, grayish-brown head, with a sharp nose and mouse-like ears, was thrust cautiously forward. For a moment I thought the creature must be a gopher, and looked to see the head disappear the instant its owner caught sight of me. Another glance, however, showed me that it was no gopher. Then, as the animal showed no signs of fear, I had plenty of time to examine and identify our little friend, the mole. I stood perfectly still, and it was evident that my brother in fur was unaware of my presence. I had a certain curious feeling as of taking advantage of his infirmity, as I bent over the hole, so I spoke to the little fellow, but although he started at the sound of my voice he did not flee, even when I remonstrated with him for his rashness, warning him that he might easily find such confidence in the human race sadly misplaced. "We are not always to be trusted," I said to him. "At this very moment I am thinking how perfectly easy it would be to catch you, and wondering what I should do with you if I should happen to yield to the universal human impulse to take possession of whatever comes within reach." For answer he advanced directly toward me, his funny little forefeet turning outward in the queerest fashion as he progressed. Within a few inches of my foot he turned and scrambled around the stems of a wild rose bush growing close at hand. He darted here and there through the tall grass in search of something, insects in all probability, which, as fast as found, were eagerly devoured. The creature must have been hungry indeed to venture so far from home.

Action Above Ground.—It was wonderful to watch him, as he moved about with as much certainty and precision as though he saw everything around him. He must have been a full yard from the entrance to his castle when, to see what he would do I stamped upon the ground. Instantly he rushed backward through the grass around the stems of the rosebush, and still traveling backward, plunged unerringly into his hole. To perform this feat the blind animal made two sharp turns, and came by the shortest, most direct route, to the desired spot. It was a wonderful exhibition of development of the sense of touch—for it must have been touch that guided him—and I stood in rapt admiration until he appeared again. This time he was cautious and did not venture his full length from his front door. Taking a long stick, I touched him gently. He started, but I did not retreat. In fact, to my great astonishment, settled quietly down and gave himself up to the enjoyment of a thorough scratching, which I proceeded to give him with the slender stick. No pussy-cat by the fireside ever showed more pleasure in a friendly rubbing than did this pretty little chap on the bank. He turned his head from side to side, stretched it upward, showing that, appearances to the contrary, he really possessed a neck, and did everything but purr in attestation of his delight. Reckless as he seemed, however, he was not off guard. Whenever I left off rubbing and advanced the point of the stick toward his nose, he seized it savagely, ready to fight the moment any tangible foe presented itself. It was an easy matter to restrain my impulse to pick him up when I noted the ferocity with which he bit at the stick.

The common mole is really, despite the meekness and harmlessness of his appearance, a most ferocious and bloodthirsty creature. It will fight on the slightest provocation, and when two of them engage in combat there is seldom a victor left to carry the tale back to moleland.

The Mole's Eyes.—It is not true that the mole has no eyes. It seemed to me that the one on the bank not only had eyes, but that the sun was hurting them. Their location in the fur about his head was plainly to be seen, and one of them seemed to exude a little moisture, as though the sun's rays were a little too strong for it. The creature has loved darkness rather than light, until as we all shall, sooner or later, it has secured what it loves most. It still has remaining the rudiments of eyes, and can probably distinguish night from day, but it cannot see. Sight would avail it not at all in the pursuit of its prey. What need has he of sight, whose hearing is so keen that he can hear the stirring of an earth worm, under ground, and whose scent is so fine that he can follow the creature through all its burrowing? What his sense of touch must be I could judge from the ease with which he found the entrance to his home.

THE IRRIGATOR.

Preserving Our Forests.

W. E. WILSIE, President Ojai Valley Farmers' Club, at the Los Angeles Farmers' Institute.

One of the favored spots of Ventura county is the famous Ojai valley. I represent a small club in this little valley, and am chosen to present the seemingly small subject of forest preservation at this meeting. When apparently there are no forests within 500 miles of us, it would seem the height of folly to take valuable time to discuss a subject so foreign to our interests. But may it not have a redeeming feature? It may, upon investigation, prove to be a larger subject than at first thought it appears. The measly brush that covers our mountain slopes are our forests; the greasewood and the manzanita, the lilac and the sage brush, the scrubby oak and the towering pines.

This question of forest preservation conserves our water supply. It is a question that directly interests more people in southern California than any that has been discussed during this institute. It is a question that every man, in whatever branch of industry he may be employed, should carefully study; every water company, every power company, every railroad company—in fact, everybody in southern California—should stop and ask themselves this question, for it is of vital importance to our interests here.

Nature's Reservoirs.—Whence comes this water with which we are supplied during our long dry seasons? Usually, the people get their water from the water company and it from the mountain streams. But where is its source of supply? Nature's reservoir. Our forests are the cover to this. Above and around our beautiful valleys are high mountains, whose slopes are covered with a thick forest growth which shades the surface and whose fallen leaves and twigs form a thick, soft blanket covering, which takes up the moisture as it falls and retards evaporation thereafter. Nature has given us this reservoir, furnished the water and expects us to keep it in repair. For years, while the country was settling up, this reservoir furnished such an abundant supply of water that the people failed to properly guard it, until now, when we need more and examine our reservoir, we find it has a leak. It doesn't hold water as it once did.

Why the Reservoir Fails.—This leak is the destruction of the forest growth, the lifting, as it were, of this blanket covering of leaves and mould from the surface of the mountain slopes, thus allowing the moisture as it falls to run off rapidly, washing great ravines, etc., as it comes tumbling down the mountain sides to join neighboring waters in the destruction of property, as it rushes madly on into the sea, when it should have been retained in this mountain reservoir to be drawn from as it was needed during our long dry seasons.

This destruction is caused by negligence, carelessness and recklessness on the part of the people. These mountains are ours, and it is for us to say whether this destruction shall go on or whether this forest growth shall be preserved.

We allow sheep to range over our mountain slopes, ranging from place to place, destroying young herbage and seedlings, and, by the trampling of their sharp hoofs, the surface of the ground is soon changed so no seed can germinate. Then comes the irresponsible herder and burns the mountain sides, that the sheep may have young shoots to browse upon the following season. Thus the forest is soon doomed to destruction. It is gross negligence on the part of the people to allow this. Not that the business is illegitimate as such, but, carried on as it is, it is incompatible with all the other interests which the foremost may subserve; just as the proverbial incompatibility of the goat and the garden, so is the growing of wood and wool on the same ground.

Through indifference, we allow fires to burn all over our mountain sides with but a passing thought, and no care as to the consequences. Reckless campers and hunters burn many thousand acres of forest cover of our mountains annually. The great watersheds of southern California are fast becoming denuded of their forest cover, and, if it is not stopped, our water supply is in danger of becoming materially less.

Forest Reservations.—This leak must be stopped. The Government has seen this, and Congress has already passed an act providing for the setting apart of portions of the public domain in forest reservations, to the end that this forest cover may be preserved.

I quote from B. E. Fernow, chief of the division of forestry of the Department of Agriculture, who, in a pamphlet entitled "The Forest Reservation Policy," says: "The forest and brush cover of the mountains in the country west of one hundredth meridian occupies a small portion of the total area, probably not more than 35 per cent. The timber of useful kinds occupies hardly 15 per cent of the whole. The

distribution and character of this growth is extremely variable, from the chapparal and stunted growth of southern California and the open pine and cedar and spruce of the lower Rocky mountains to the magnificent world-famed giants of the Sierras and the dense unmatched forest growth of the Cascade and the Coast range in northern Oregon and Washington. Corresponding to the difference in distribution and development of forest growth, the climate varies, especially with reference to moisture conditions. The northwestern portion of the Pacific coast has an abundance of rainfall and high relative humidity; the southern portion and lower Rocky mountains are more or less arid. In either section a forest cover of the higher elevations and slopes is needful; in the one case to hold back the snow and rain water from inundating the agricultural lands below, in the other to preserve the scanty water supply by impeding evaporation."

The Government is ready and willing to help us in this matter. Let us have set aside as a forest reserve the mountain portions of southern California. It will be done for the asking. It looks like a big thing to ask for, but let us ask great things and expect great things. I have heard it said that if a person really would make up his mind to do a certain thing he could do it. If the people of southern California really made up their minds that they want the forest growth preserved on their higher mountain slopes, they can have it. All they have to do is to say that they want it, and they will get it, for the department already recognizes the necessity for it. There is only one man it would hurt and that is the sheep herder, and it would be far cheaper to give him a pension and let him retire to some quiet country town, there to spend the balance of his days in peace and plenty, than to give him free access to our mountain reservoir, and there, through recklessness, destroy what Nature intended for the people.

SHEEP AND WOOL.

The Future of the Sheep.

There has just been held at The Dalles, in Oregon, a convention of the Pacific Northwest Woolgrowers' Association, which, according to the *Oregonian*, is the first of the kind ever held in that section of the country, and the sheepmen showed their interest by attending in large numbers. Prominent woolgrowers from all over the Northwest were among the delegates. The unanimous sentiment seemed to be that such an organization can accomplish a great deal toward smoothing the paths of sheepgrowers.

A leading address was delivered by W. P. Anderson of the Chicago Stock Yards, which will be read with much interest by California woolgrowers:

An Important Situation.—There never has been a period in the history of this nation when more serious consideration should be given intelligent sheep growing. Of course, the paramount question in the Pacific Northwest is that of proper forage plants. It is a foregone conclusion that Oregon must sooner or later cultivate its sheep pasturage to keep pace with the times. This subject, no doubt, will be fully covered at this meeting by your agricultural college people, who, judging by the exhibit that was made at the recent live stock meeting at Pendleton, are fully alive to the importance of this question, and with them the successful sheepgrower must co-operate.

The almost universal custom which now obtains of determining the value of sheep by weight, instead of by the head, is a great incentive for the use of nitrogenous grasses to preserve the lamb flesh and fat with the growth of the animal.

Western Sheep in Chicago.—In order to give you a practical idea of how Western sheep appear on the Chicago market, which is acknowledged to be the greatest mutton and wool market in the world, I quote from the bulletin issued by the Colorado Agricultural College, setting forth the different kinds of Western sheep fed in Colorado, which fairly well reflects the kind which comes to the market from the West through other channels. There were about 300,000 of these lambs on feed in Colorado during the present winter, and while they are only a drop in the bucket, compared as a whole, they are largely in evidence as to what thrifty communities can do by intelligent co-operation with experiment stations, such as the O. R. & N. Co. is endeavoring to promote in aiding in institute work in this State, and encouraging the live stock producer to organize for the purpose of disseminating useful information in the furtherance of their mutual interests.

The Old Mexican Sheep.—The Old Mexican sheep have been bred with scarcely any outcross, and are a very distinctly marked breed. They have long legs, a long, thin body, not very deep, small, rather long neck, and a long, thin head, carried high. The wool is fine and thin. To the eye they appear almost worthless as a mutton sheep, and of still less value for wool. Their good points are: They are hardy, excellent travelers, will keep in good condition on the poorest and driest of ranges, are fairly prolific,

and can be herded in bunches of almost any size. They fatten easily, though never looking plump and fat like the Northern sheep. When they reach the Chicago market, if in good condition, they outsell all other sheep, for they shrink very little in dressing. The meat has an excellent flavor, and the hide is so thin, firm and soft as to command the highest price. A well-fattened bunch of Mexican lambs will weigh on the Chicago market 75 to 81 pounds. Yearlings, ewes, and old wethers of this breed are in good condition if they weigh 90 pounds in Chicago.

New Mexico Sheep.—These original Mexican sheep have been largely graded with Merino rams in New Mexico and southern Colorado, and for some years were run there as grade Merinos for wool. They have not the thick, wrinkly fleece of the typical Merino, and show decidedly their Mexican origin, being intermediate in length of leg, body, neck and head, between the true Merino and the Mexican. They are a small-bodied, quick-maturing sheep, and, although never growing very large, they get very fat. It takes them longer to fatten than the better bred sheep. Never less than five, and usually six, months elapse from the time they are put on food until they go to the market.

The bunches of lambs brought from New Mexico run quite even in size and appearance. They are kept under the same condition, and but few of the flocks have as yet been topped with mutton breeds so as to present any great variation from the general type. When brought to Colorado in the fall, about the first of November, the lambs weigh, in bunches, from 48 to 53 pounds. When shipped to Chicago, in May, they weigh from 80 to 84 pounds. Their frames are not much larger than in the fall, but the body is much deeper, almost touching the ground, and they are almost as thick through, making them very plump. They easily command the highest prices on the Chicago market for the same reasons as the Mexican sheep.

Merinos.—Until within a few years ago nearly all the sheep of Colorado, Wyoming, Utah and Idaho were straight Merino sheep, bred for the most part from Merinos brought from the East. Some flocks originated from the Mexican or New Mexican sheep, but they were crossed so many times with such thoroughbred Merino rams as to lose the characteristics of the Southern sheep. So long as these flocks were used for wool they were carefully bred by purchasing high-priced rams from the East. As the price of wool fell, the profits decreased until some seven or eight years ago a point was reached where the sheep for mere wool ceased to be profitable. Many flocks were sold and those sheep men that continued in the business turned their attention to wool and mutton. Many of them still continue to use Merino rams, but the number of these flocks is constantly decreasing. Especially from Wyoming westward, the use of rams of the mutton breeds has become almost universal. These Merino flocks from the North retain the thick fleece of the original Merino, since the climate is not hot enough to thin out the fleece, as it does in New Mexico and Texas. Most of the wrinkles disappear, but a few remain around the shoulders, and the face has the Merino color distinct, they being thus easily distinguished from the Southern sheep, which have no wrinkles and very thin wool around the head. The lambs are short-legged and consequently not as good travelers as the Southern sheep; nor do they need to be, for the Wyoming ranges will average much better than the New Mexican. The lambs appear larger than the New Mexican, but will not weigh quite as much. From 42 to 47 pounds is an average weight on December 1. They grow a little more rapidly when put on feed than Southern sheep, and will stand a little heavier feeding. In May they will weigh in Chicago just about the same as the Southern lambs, and although the price is hardly lower than for Southern lambs, yet, if equal bunches were put on the market together, the Southern would more rapidly find a purchaser. The ewes, yearling wethers and older wethers of the Merino are heavier than those of the Southern sheep. Yearling wethers in December should weigh from 80 to 90 pounds; old wethers occasionally go over 100 pounds. They fatten more quickly than the lambs—much more quickly than the Southern lambs. Four months' feeding is always sufficient, and many bunches will be ready for market after three months. They should weigh in Chicago from 115 to 125 pounds.

Mutton Sheep.—There are practically no flocks of pure mutton sheep on the range. All the so-called mutton flocks have come from using pure-bred rams on the original flocks. These crosses have usually been mixed, that is, a ram of one breed has been used for two or three years and a change made to another breed. This prevents in-breeding, and is considered by some to make a larger and a harder sheep. The Western lambs fed at the State Agricultural College of Colorado in 1895 were sired by a Cotswold ram out of ewes that had one Southdown and two Shropshire crosses on the original Merino, and they are supposed to be out of the finest bunch of sheep on the whole Western range. The Cotswolds have the largest frames of any of the mutton breeds; but if much of this blood is used it gives too large legs and too coarse bones for the best and most rapid fattening, and the sheep do not command the

best prices on the Chicago market. If one breed only is used, it is probable that the Shropshire comes the nearest to filling the demand. Great pains have to be taken not to get too far from the original Merino blood, lest the sheep do not do well on the range. Pure-bred Shropshires, Cotswolds or South-downs do their best in flocks of less than 100, and cannot be profitably run in bunches of more than 200. A mixture of a small percentage of Merino blood gives them better grazing habits and enables them to be run in flocks of even 5000. It is not profitable to range sheep in flocks of less than 1000.

Again reverting to the marketing of sheep, it is incumbent on every shipper of sheep to study the railway system engaged in their transportation. To avoid flooding the markets, relay feeding stations are provided by each of the great railway systems centering in Chicago, at which sheep can be stopped and fed within a few hours' call, which enables the shippers and commission men to lay them out or call them in at will, in compliance with the law of supply and demand.

STOCK LAMBS FROM THE WEST.

At the same convention John A. Craig of the Iowa experiment station made an address on the sheep market, in which he sketched the place of the far West in the production of stock for Eastern feeders:

Western Opportunities.—The market for the lamb is in the East, the feed to make the lamb fat is in the Central States, and you in these Northwestern States have ideal conditions for the production of the lamb up to the time it is to be fattened.

In describing the outlook for the Western market, I cannot do better than give my own experience in feeding lambs. One thing that has been indelibly impressed on my mind as a result of my experience is that to bring the best price in the Chicago market the lambs should be fat at a weight of about 100 pounds. The first carload I followed to Chicago were bought in northern Wisconsin, and I bought them of a dealer who thought they were ready for market. He fed them twelve weeks and put them on the market. They sold for 10 cents per hundred under the top price, and I was told they should have been fed two weeks longer. The next lot were fed fourteen weeks and they topped the market. The lambs of this weight sell so well because they dress well and furnish the size of cuts that are desired. That is why the Western lambs sell well on the Chicago market. They dress well because the stomach and entrails are very small. The Western lamb, fed as in Iowa, will outsell the native lamb, and we like to feed them because they are thrifty. The question as to where the Iowa farmer or the feeder in the Central States will get his feeding stock is one of importance. This winter at the Iowa station we fed Mexican lambs, and they finished well, but from an observation of these lambs at Fort Collins, and from an inspection of the lambs from the Northwestern States at the St. Paul feeding yards, it has appeared to me that the Northwestern lambs are better bred and better feeders. They seem to fatten quicker, a statement borne out by the fact that the lambs at St. Paul were nearly all marketed before the Colorado lambs began to go to market.

The Wool Outlook.—In regard to the wool market, conditions are more uncertain than in the mutton market. The wool market depends so much on fashion that it always will be more or less uncertain. It is the cloth we wear that determines the demand for the wool we have to sell. The wool most in demand at the time—and it has been so for the past ten years—is a medium combing wool. To make plain the meaning of this trade term, let me review the kinds, classes and grades of wool that the Chicago market recognizes.

When a sack of wool goes into the market it is first determined whether it is domestic or territory. A domestic wool is clean and bright; a territory wool dirty and discolored. It is then arranged in a class, either clothing, delaine or combing. A clothing wool is one that is under 2 inches in the length of its fiber. The fiber may be longer, but if it is unsound it passes into a clothing class and drops 3 or 4 cents per pound. Delaine wool is from 2 to 3 inches long, and combing wool is over 3 inches long and sound and strong.

The condition of the wool market is such at this time that the best sheep for mutton also brings more for its fleece. The sheep that produces a lamb that is smooth and fat at 100 pounds, and also yields a dense fleece that is fine, strong and about 3 inches long, is the one that produces the wool and the mutton that top the market.

THE DAIRY.

The Evil of Poor Cows.

The dairy in California, as in other States, is restricted in progress and prosperity by two great evils. One is shiftless and ignorant men, and the other is poor cows. If dairymen were more wise and energetic there would be no poor cows, so, after all, the cow is not to blame. But it is safer to abuse a cow than a man, so we will take that route. We

have preached many a sermon on this text in the RURAL, and probably it is not the RURAL reader who needs the exhortation, but rather the man who does not read. Him we can only reach indirectly, but here is a shot for him anyway.

Worthlessness of a Poor Cow.—At the twenty-sixth annual convention of the Wisconsin State Dairymen's Association President Burchard delivered a very interesting address, and among other things said: What dairymen need most is a realizing sense of the worse than utter worthlessness of a poor cow. It is quite within the truth to say that one-third of all the cows in this State kept by men who profess to be dairymen do not pay for their board and cannot be made to pay, and are consequently kept at a loss; that another third do not more than pay for their own keeping and make good this loss, which means that two-thirds of all the cows kept return no profit whatever, and that only the remaining third are genuine profit makers. This division into thirds may not be liberally exact, but it at least illustrates in no exaggerated form the cow end of the dairy problem which confronts us to-day.

What Should a Cow Yield?—The cow that does not yield 4000 pounds of milk in a year is not worth keeping. What is the average yield per cow in these lake shore counties? I am sure it is not 4000 pounds. There may be a goodly number which yield more than this, but this is only saying, in another way, that there must be many which yield less. Somebody owns and feeds these poor, worthless—yes, worse than worthless—cows. Who is it? I can't tell you his name, but I can give you some of his symptoms. He is usually more or less in debt, and seldom or never has a dollar in his pocket that he can rightfully call his own; he works hard, and so do his wife and children, rising before it is light in summer, as well as in winter, and continuing his labor long after dark at night. He has to do this because he gets no help from his cows. He is the man who complains about the times, and the low prices for milk and butter and cheese, forgetful of the fact that everything except wages has declined in price more than milk has. He is the man, above all others, who cannot afford to keep such cows. I wish he might be here to-day and to-morrow and the next day to learn that there is a better way, to gather inspiration and hope, and withal courage to go home and dispose of those profit-destroying cows. This is the simple proposition: A man may be keeping three cows at a loss, whereas by disposing of one the other two will yield him a profit. And if they don't, let him dispose of one more, always ridding himself of the poorest. The same rule will apply in a good many of the larger herds.

Pruning the Dairy.—There isn't a dairyman that does not have some idea that he must prune his fruit trees and berry bushes, and quite frequently dig out or cut down here one and there another, because they will not bear fruit to his satisfaction. His dairy herd needs pruning quite as badly. If this convention could only start a crusade against the poor cow and get people aroused so they would cry out, "Down with the robbers!" it would result in hundreds of thousands of dollars increase in annual net profits.

A Forceful Illustration.—I wish it was possible for me to make dairymen realize that it costs money to keep a cow, or money's equivalent in labor, and pasture and hay and grain. It is a common saying among farmers: I have the pasture, or the hay and the oats and corn, and I may as well feed them out, for they won't bring anything if I take them to market. This is all very well if they would feed as they sell, only to such animals as will pay. A farmer does not sell a second load of hay or grain to a stranger who when buying the first said, "I will pay you next week," but at the appointed time says, "Go to. 'Tis true I had your hay (or your grain, as the case may be), but I do not intend to pay you for it; in fact, could not pay if I wanted to. Please sell me another load on the same terms." He would hunt for and find another purchaser—some one who could and would pay. And that is what I want them to do with cows—sell only to such as can and will pay.

Easy To Have Good Cows.—I say, in all candor, and I know whereof I speak, that it is just as easy to have a herd of cows that will average more than 275 pounds of butter or 600 pounds of cheese every twelve months as it is to have one that will average less than that. If a man's cows do not bring him an average of \$40 each every year, even at last year's prices, he has only himself to blame. This is the minimum that should be tolerated, and when once reached it is comparatively easy to go above it. It is the first step that counts, especially if that step is in the right direction. Once on the right road the way is neither obscure nor difficult.

Dairymen in every State and Territory in the Union have more than doubled the average production of their herds. No one who reads this testimony can for a moment doubt that the cow power of every county in Wisconsin could be increased from 50 to 100 per cent without increasing the number of cows or adding anything to the expense of feeding and caring for them.

THE VETERINARIAN.

Tuberculosis.

Owing to the wide interest in this disease, we continue to give the results of the latest investigations. A farmers' bulletin of the U. S. Dept. of Agriculture just issued says that tuberculosis in cattle and other animals is identical with the disease of man commonly known as consumption. It may readily be communicated from man to the lower animals, and also from the lower animals to man. In the latter case the infection occurs principally through the meat and milk of diseased animals. Cattle are apparently more subject to the disease than are other farm animals. Statistics on this subject, although quite variable and in many respects unreliable, show that no country is free from the disease. While the prevalence of this disease both in the human species and in the lower animals has long been well known, it is only within comparatively recent years that there has been found in the so-called tuberculin test an accurate means of detecting tuberculous animals in the early stages of the disease. This test has been studied by a large number of stations, and its value for diagnosis of the disease has been firmly established. The importance of this can hardly be overestimated in view of the widespread occurrence of the dreadful disease and the extreme necessity of reducing its ravages by destroying as far as possible all sources of infection.

Conditions Affecting the Disease.—The different degrees to which different grades or classes of animals are affected has recently been brought out by investigations by the experiment station in Minnesota, where, of some 13 366 animals subjected to the tuberculin test, native animals were found to be diseased to the extent of 7.8 per cent, high-grade animals to the extent of 10.8 per cent, pure breeds, 16.6 per cent, farm herds, 14.2 per cent (omitting fifty-five animals from two herds, 7.8 per cent), and city dairy herds, 10.4 per cent. The animals in these tests were also graded with respect to the condition of the stables in which they were kept, with the result of showing that stable conditions are very important. Under good stable conditions 10.1 per cent (omitting fifty-five animals in two herds, 6.8 per cent) was affected; under fair conditions of stable, 7.28 per cent, and under poor conditions of stable, 19.1 per cent. Similar results were obtained by a comparison with respect to the ventilation of stables, 9.5 per cent (omitting fifty-five animals in two herds, 5 per cent) being affected in well ventilated, 6.16 per cent in fairly well ventilated, and 16.6 per cent in poorly ventilated buildings. In general these results are about what the laws of health would lead one to expect; but the existence of two badly infected herds where the conditions were most favorable to health shows that the disease may prevail even where a very considerable amount of care is taken in the way of ventilation and general sanitary condition of buildings. Such a prevalence of the disease is doubtless due to an introduction of diseased animals—it may be in efforts to improve the breed of stock—and emphasizes the fact that the breeder can scarcely be too careful in introducing animals into his herd. This is especially important in case of well-bred animals, which, as shown above, for various reasons seem to be more predisposed to disease than ordinary farm animals.

Calves Rarely Affected.—Statistics have been gathered which indicate that steers and bulls are less subject to the disease than cows, and calves less than older animals. In fact, it has come to be generally recognized that newly born animals are only rarely affected with tuberculosis.

In this connection the results of an investigation of twenty-seven calves from tuberculous cows in Minnesota are very interesting. Of these twenty-seven calves one died soon after birth and was found to be tuberculous, and two others, one fed by sucking the dam and the other on sterilized milk, became tuberculous. The rest were raised on milk from tested cows and upon sterilized milk, and at the end of the experiment were, as shown by tuberculin tests, in a sound condition. This gives a little over 11 per cent of tuberculous calves from tuberculous dams, and in only one case, or a little over 3.7 per cent, is there evidence of infection before birth.

In European experiments, of sixty-seven calves fed on the milk of untested cows nearly 40 per cent became tuberculous, while of 109 fed on milk from tested cows less than 19 per cent became infected. In a later experiment with seventy-eight calves reared on milk from healthy cows, 15 per cent became diseased.

Significance of These Facts.—These experiments encourage the hope that this disease may be gradually eliminated, not only from small herds, but eventually from entire countries by adopting the well-known method in which herds are divided into groups of diseased and healthy animals which are kept separate from one another, and calves from diseased animals are reared on sterilized milk or on milk from healthy cows.

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It excels all others in Durability—Few Repairs.

GRANVILLE, O., June 22, 1897.

Have used the Improved U. S. 3 years, have bought no repairs, does as good work as at first.

J. A. McLAIN.

MONTICELLO, MINN., June 15, 1897.

During 3 years the Improved U. S. has not missed a skimming, running morning and night, separating the milk from my herd of 22 cows. Had a DeLaval, but at the end of first year it seemed useless.

HENRY WORTHING.

SHELDON, VT., Aug. 7, 1897.

A user, after four years' use, says: "Yes, Eureka is the word—over capacity—best of skimming—never plays off—the Improved U. S."

J. H. RILEY.

MORRIS, N. Y., June 24, 1897.

The Improved U. S. runs as nicely as when set up 3 years ago. I could make good money skimming milk from the DeLaval separator.

S. A. FOOT.

HOBART, N. Y., June 14, 1897.

The Improved U. S. is as good to-day as four years ago. There is not so good a separator as the Improved U. S.

D. P. DIXON.

SUN, N. Y., Dec. 21, 1897.

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GEO. & H. JORDAN.

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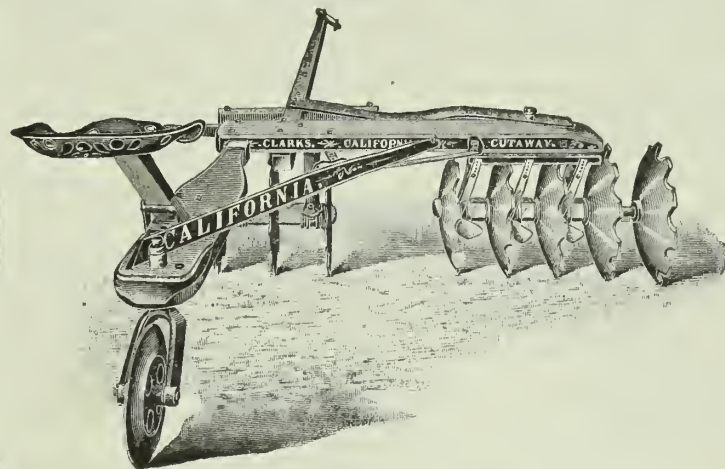
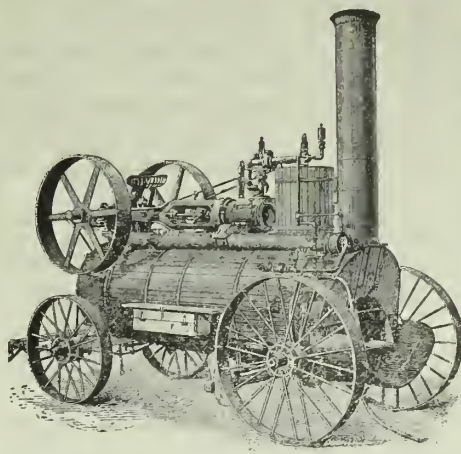
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INTENSE cultivation is the word. The California Cutaway leaves the land friable, aerated and thoroughly pulverized at ONE operation, all foul stuff being cut to pieces and mixed with the soil. Cuts 3 1/2 in. wide, 5 to 8 in. deep. Does the work of an ordinary plow, harrow and pulverizer, and at one-half the cost. The tool itself does not cost much.

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They are made in two sizes, for one or two sprays.

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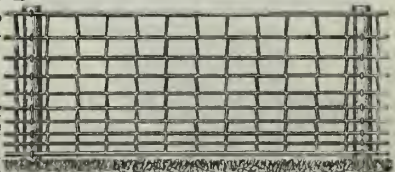
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THE HOME CIRCLE.

Bobby's Tool Chest.

They gave him a chest full of wonderful tools, when he got to be six years old, and he made up his mind to go forth in the world and become a carpenter hold.

"I've gimlets and saws, and hammers and nails. I've jackplanes and awls," said he.

"I've rulers and screws. How can I refuse a carpenter-man for to be?"

"The first thing to learn is to hammer a nail." And he got his hammer and tacks, and he hammered, and hammered, and hammered away, till he'd used up a half dozen packs.

He nailed up the doors, and he nailed down the floors, and he nailed 'em again and again.

And he made no mistake till he hammered a tack through the nursery window pane.

Then he took up his saw, and he tried its teeth. "I must now learn to saw," he said.

And he sawed in two some bureau drawers, and he sawed off the legs of his bed; and he sawed on the lock of the nursery door till the teeth of the tool grew rough.

And then he sat down and remarked to himself, "Well, I guess I have sawn enough."

"I will now try the awl and the gimlet, too, and learn what different kinds of holes they make—for they're not alike"—and he bored on the outside blinds.

He bored six holes in the shutter slats, and then made a change again, and tried his luck on the bureau top with the beautiful two-inch plane.

And then, poor boy! some one came in, and oh, what fuss was raised!

They spanked that hoy for trying to learn when he thought he'd be surely praised; and his father was mad, and his mother was mad, and even his sister cried, because he'd taken her desk apart to see what there was inside;

And the baby, too, was as wrathful as they, because for a little while he'd used the ruler to find how wide was the dear little fellow's smile.

And that's why Bob—the poor little chap—has changed every future plan, and is going to be a policeman bold instead of a carpenter-man. —Round Table.

A Questioner.

A little child to-day sits on my knee,
And questions me of many things that he.
A question and its answer make for him
A something definite of what was dim.

This little child, long slipped from off my knee,
In life to-morrow, facing things that be—
Will his ideals be clear or sadly dim—
Because of how, to-day, I answer him?

This little child here sitting on my knee
Is greatest and most real of things that be;
My faith in truth and goodness is not dim—
I'll give my best and truest unto him.

—Junietta Stafford.

What 'Bijah Hawkins Found.

"And how are your folks, Adzette?" said Mrs. Abijah Hawkins to her caller, Miss Adzette Dobbs, after having answered a similar inquiry.

"Well, I suppose we can't complain, Jane. Pa Dobbs ain't what he was; he has to sit all day without usin' his eyes, and, land o' goodness! I don't get a single moment till after supper so's I can read the paper to him. Then, you know, Aunt Phebe's fidgety about draughts; if she had her way, the house'd be like an oven, and she goes 'round the room pickin' at pa 'cause he's got in the habit of sittin' in her big chair by the fire—the one that Uncle Silas bought down to John Townsend's auction. I keep pretty well, though, and my lame shoulder ain't bothered me since I gave up the washin'."

"Exactly what I told 'Bijah. I said when Adzette Dobbs gave up her washin' she'd soon forget there was such a thing as a lame shoulder. 'Bijah said—"

But at this point Mrs. Hawkins stopped in some confusion, for she remembered that 'Bijah had said like Dobbs would finger half a dollar for some time 'fore he'd give it up for hired washin', with a pair of strong arms like Adzette's in the house. Her hesitation was hardly noticeable, however, for another of 'Bijah's sayings quickly came to her aid, and she continued:

"'Bijah said if I could manage without a girl this winter he'd get me a new silk, and you know, Adzette, that my old one is too shabby now for anything except second best; so I told him I'd

try it, if he'd let me have the washing done."

"Mary Finnigan said she was comin' to your place to wash last week," returned Miss Dobbs, "and when I heard it, I said right out plain that I was glad that 'Bijah Hawkins had given in at last; for I do think, Jane, that it was a shame for you to have that big wash on your hands, and 'Bijah just as well able to have it done as Pa Dobbs is, every bit."

This last remark Miss Dobbs emphasized by a determined shake of her head and a straightening of her small body, as though she hoped the energetic pantomime might convey to the offending 'Bijah, who was just passing the window, some sense of his shortcomings in the matter under discussion.

The Dobbs and Hawkins families had been intimate for years; to have known Abijah Hawkins as Miss Adzette Dobbs knew him without being aware of his dominant trait would have been impossible, and it was not in her nature to spread the mantle of charity over the failings of any, much less over 'Bijah's, for the man's prevailing characteristic was a grasping closeness, which to her was an unpardonable sin.

To Adzette's last statement Mrs. Hawkins made no immediate reply. She was a woman of meek temperament, seldom given to self-assertion and disposed to yield rather than contest disputed points. Yet in some way best understood by herself, she had managed to live peaceably and in comparative comfort with her husband, a man whose name was a synonym for tight-fistedness and irritability of temper as well.

What luxuries the grudging, though well-to-do 'Bijah doled out to his wife were obtained by her usually at the expense of some concession of equal value, as in the case of the silk dress.

By this transaction, 'Bijah figured, much to his satisfaction, he was saving the difference between the cost of the dress and the added expense of help; but as Mrs. Hawkins felt fully able to take charge of household matters that winter, providing the washing was taken off her hands, and as she had long desired the possession of a new silk, it will be seen that 'Bijah was not the only one gratified by the bargain. If he had suspected that Mrs. Hawkins, in her quiet way, had thus obtained a coveted addition to her wardrobe, and one which he never would have consented to buy outright, his perverse disposition would have rebelled and the purchase would never have been made; but, like all narrow, self-centered men, he was too well satisfied with himself to admit the possibility of being outdone in shrewdness, particularly by his wife.

"Now, Adzette," commenced Mrs. Hawkins in reply, after a short silence, "of course I know that 'Bijah might be—"

But at this point she was interrupted by 'Bijah's entrance.

"Good afternoon, Adzette. Come in to see if you'd heard that Tom Miner's house was to be sold at auction to-morrow?"

"Old Miser Tom's house sold?" echoed Miss Dobbs. "Well, I never! Who'd buy it, I want to know? 'Tain't good for anything but old wood."

"Maybe it ain't an' maybe it is," said 'Bijah, mysteriously. "It wouldn't surprise me to hear that enough's been found somewhere about the house to more'n pay for old Tom's buryin'."

"Well," said Miss Dobbs, as 'Bijah left the room, "I know they do say that old Tom had money once, and lost the most of it years ago, helpin' his brother Amos out of some trouble he had when he was cashier of the Hadleyville Bank. That's the only good he ever did, though, for a more shiftless, good-for-nothing miser never lived."

This speech had been mainly a monologue, for Mrs. Hawkins had followed 'Bijah from the room. When she returned it could be plainly seen that she had been crying.

"Jane Hawkins, you've been cryin', and I want to know what's the matter," demanded the irrepressible Miss Dobbs.

"It's nothing, Adzette," replied Mrs. Hawkins, "only you know what store I set by my cellar, and now, just after getting it all to rights, with nice, new hanging shelves for my preserves, 'Bijah's going to buy that tumble-down house of Miner's and pile that dirty wood all over my clean floor. I declare it is provoking to have that old stuff tumbled pellmell about my shelves. He gets it at what he calls a bargain, but I believe it's hardly fit for kindlings."

At this recital of 'Bijah's latest usurpation of feminine privilege Miss Dobbs delivered some very forcible remarks about men in general and Abijah Hawkins in particular, at the same time consoling her listener with sundry of her own experiences, and recounting the trials of Ma Dobbs and Uncle Silas Merritt's wife, after which she took her leave.

Mrs. Hawkins' tearful remonstrance availed nought with 'Bijah. He attended the auction and bought the miser's house as it stood for something over \$20, and with the assistance of a carpenter the building was torn down and the timbers carried to the cellar of his own house. The precautions he had taken, however, in demolishing the building betrayed the secret of its purchase, and soon the story was told from end to end of the Four Corners that 'Bijah had bought it expecting to find a hoard of money which the old miser had secreted. So ran the talk of the village, but 'Bijah heeded it not. To his wife alone he betrayed an altered demeanor, and at times became quite sociable—for him.

"Jane," said he one night, as they sat together before the fire, "did I ever tell you why I bought old Tom's house?"

"No, 'Bijah."

"You've heard Adzette say that the neighbors were talkin' down at Wyckoff's store about my buyin' it, and that they said Tom had told me there was money in it, haven't you?"

"Adzette told me Sam Wyckoff said that."

"Well, he ain't far wrong an' he ain't just right, neither. And now I'm goin' to tell you what ain't known to a livin' soul but me," continued 'Bijah, glancing furtively around as though to assure himself that they were alone. "The night Tom died I was ridin' home from Hadleyville, and as I was passin' his house I saw him fall, goin' up them rickety steps of his. I got out and helped him onto his bod. He was mumblin' something about money and the Hadleyville Bank. After a few minutes he kinder roused up and whispered, 'It was good of you, 'Bijah, to help me in to my bed. If I had anything to give, I'd want you to have it. They say I've got money hid in the floor beams, but they lie. I did have once, but it's all gone. There's nothin' hid in the beams, 'Bijah!' Then

he fell over on the bed and died. An' from what I knew of Tom Miner I made up my mind that it was in the beams, an' I bought 'em. What's there is goin' to be found, too," he emphatically concluded, while an avaricious light gleamed in his small eyes.

Mrs. Hawkins was not surprised by 'Bijah's disclosures, and though she did not wholly credit the existence of the hidden money she could not forbear speculating upon the possibilities of its discovery. Tom Miner's history she already knew. He had been possessed of considerable money, but had parted with the bulk of it in coming to the rescue of his only brother, who years before had been convicted of grave irregularities in the management of the Hadleyville Bank, of which he was the cashier. The dishonesty of his brother and his own loss in consequence were blows from which Thomas Miner never recovered, and, disheartened and alone in the world, he became more and more neglectful of his attire and surroundings, until he fully merited the appellation which the Four Corners had bestowed upon him. That he possessed money secreted about the house was the common belief, and 'Bijah's faith in it had been confirmed by the last utterance of the old man. Presently 'Bijah again spoke.

"If Tom's pile comes to what I think it will, Jane, you can have your new silk right away, and the Perkins girl can help you through the winter, if you want her."

"That will be very good of you, 'Bijah, though I think you will not find the money," replied Mrs. Hawkins, rising.

"If there ain't anything found, it'll be an end to that hired girl question, you can bet," said 'Bijah to himself, as his wife left the room.

The pile of beams in the cellar was daily lowered by 'Bijah's systematic work with saw and axe. To the large floor timbers he gave the most attention, sawing them into short lengths and then cautiously splitting them through the center. Every nail mark and splintered place he scrutinized with eager eyes, for he felt that the money must be hidden in some place hollowed out of the big beams.

Thus passed a week or more; but one afternoon, as Adzette Dobbs and Mrs. Hawkins were discussing an approaching church sociable, they were startled by a crash, followed by a loud exclamation. The noise came from the cellar. Mrs. Hawkins ran to the door, but before she reached it in rushed 'Bijah, wildly excited.

"Jane, Jane, look here! Old Tom's money! He'd chiselled out a place in one o' them floor beams big enough to hold all this," waving a package of dirty bank notes in the air, "an' I sawed right into the edge of 'em! See!"

(Continued on page 186.)

HE BROUGHT IT FROM THE
WORLD'S FAIR.

And kept it two years.

The great World's Fair, at Chicago, in 1893, while it gave pleasure to many, gave pain to not a few as an indirect result of their visit to the White City. People were lured along the miles of wonderful exhibits by the new marvels that met the gaze at every step, and did not realize their exhaustion until they dropped into a chair in some breezy corner by the lake, and "cooled off." That's what began the trouble, in many cases. Of one such case, Mrs. L. W. Stevens, Fort Fairfield, Me., writes:

"My husband took a severe cold and cough two years ago last October—time of the World's Fair, which we attended. This cough lasted over two years, was accompanied by spitting of blood, and nothing could be found to help him, although various remedies were tried. Several doctors were consulted, but their prescriptions afforded no relief. Finally, I saw an advertisement of Dr. Ayer's Cherry Pectoral in my paper and prevailed upon my husband to get a bottle and try it. The very first dose helped him and he was completely cured in a short time. We feel

very grateful for what Dr. Ayer's Cherry Pectoral has done for us, and shall keep it constantly on hand in the house."—Mrs. L. W. STEVENS, Fort Fairfield, Me.

Two years of doctoring for a cough, two years of "remedies" that gave no help, of prescriptions that profited only the men who wrote them, and then a trial of Dr. Ayer's Cherry Pectoral, which helped from the very first dose and effected a complete cure in a short time. The difference between Dr. Ayer's Cherry Pectoral and all other cough medicines could not be better stated than in this comparison of results. It has cured the most stubborn and obstinate cases of chronic bronchitis and asthma. It is a specific for croup and whooping cough. It cures all coughs and colds and all affections of the throat and lungs promptly and effectively. In response to numerous demands Dr. Ayer's Cherry Pectoral is put up in half size bottles—sold at half price—so cents. More about cures effected by Pectoral in Dr. Ayer's Cure-book. Sent free, on request, by the J. C. Ayer Co., Lowell, Mass.

Fashion Notes.

Velvet boleros, shaped to cover the whole upper portion of corsage, but variously shaped below, are to be a feature of early spring gowns.

A pretty robe de ville is one which shows a polonaise effect now fashionable. The material is beige cloth, embroidered disks of different sizes and of a deeper shade. The blouse has circular revers turned away from a vest of plain cloth, and is trimmed with a round yoke and a choker of amethyst velvet. Over the embroidered underskirt is a second skirt of the plain wool cut like the skirts of a polonaise.

Embroidered linens make the most charming of summer frocks, and dressy women will be glad to learn that these are promised for the coming season. Ecru linen, beautifully embroidered in white, with trimmings of white lace, affords an early, up-to-date suggestion for those on the lookout for recherche costumes. Ecru linen embroidered with velvet and green are new fancies.

Bonnets for young women have been very popular for the past two months, as large hats have become very common, and some of these dainty affairs are made of steel and jet, with a sort of butterfly wings and a small crown just large enough to take the small coil at the top of the head. A large bow of velvet ribbon attached to a little beaded crown is another youthful model.

Narrow chinchilla borders trim some of the simple but elegant costumes being prepared for Lenten wear this season.

Black gowns in cloth and various other new black materials are very fashionable.

If you want to indulge in the latest frivolity have your handkerchiefs embroidered with flowers to match the blossoms in your hat.

The craze for jewelled effects is very noticeably expressed in the jewelled belts and dog collars worn over fur jackets, and to complete this outfit the muff must have a large jewelled buckle in the bow which decorates the top.

Ribbon gathered and ribbon plain are very much used for trimming our summer gowns. Colored grenadines and black nets made up for wear in the South during the early spring show may ruffles edged with one, two or three rows of ribbon.

Cashmere in the favorite shade of gray is used to make a girlish frock in combination with red velvet embroidered in steel. The skirt is cut in several flounces headed by many lines of stitching; the bodice and sleeves of embroidered velvet are partly covered by a décolleté blouse of wool, finished with stitching and buttoned on one side with a queerly shaped tab. The princess model holds its own, but it generally presents a panel and some from of one-sided trimming on the upper part. Sleeves of a material different from the rest of the gown are promised for the early spring, and sleeves in general will undoubtedly be a good deal trimmed.

Sashes of all kinds and conditions are well to the front in fashion, and the new ribbons are more beautiful than ever. There are Roman stripes, checks and plaids, with satin bordered edges, and flowered, corded and watered ribbons of all kinds. Net, chiffon and lace sashes will continue in favor; but it is not alone sashes for the waist that swell the list. The sashes for the neck are quite as conspicuous and more generally worn, for all women seem to like the long, silken cravats around their throats. They are made of liberty gauze, chiffon and thin silk, or of swiss, with hemstitched and lace-trimmed ends. The newest of these neck sashes is a scarf of net with an elaborate lace pattern at the ends and an edge all around. They range in price from \$4 to \$15, and are really very elegant. In smaller things for the neck there is an unlimited variety. Short bows and knotted cravats of pure white lawn, with knife-plaited frills on the ends, are added to an array of lace knots and neck frills which are beyond description.

Gems of Thought.

Time well employed is Satan's deadliest foe.—C. Wilcox.

We imitate only what we believe and admire.—Willmott.

Temper, if ungoverned, governs the whole man.

Levity of behavior is the bane of all that is good and virtuous.—Seneca.

Next to love, sympathy is the divinest passion of the human heart.—Burke.

We all live on far lower levels of vitality and of joy than we need to do.—Farrar.

Troubles spring from idleness, and grievous toils from needless ease.—Franklin.

Suspicion is no friend to virtue, and always an enemy to happiness.—H. Ballou.

The human heart is like heaven. The more angels, the more room.—Frederika Bremer.

Learn to say no, and it will be of more use to you than to be able to read Latin.—Spurgeon.

So many people seem to take life as a doom, and allow its inevitable conditions to depress them, instead of taking its conditions and weaving the most glorious issues.—J. F. W. Ware.

Curious Facts.

A curious character in Paris is a man who makes his living by strolling along the boulevards and making wagers that he can answer correctly any question that relates to the history of France. He always wins.

It is stated on German authority that the astounding number of two million glass eyes are made every year in Germany and Switzerland, while one French house manufactures three hundred thousand of them annually.

A single stone 115 feet long, 10 feet square at one end and 4 feet square at the other, has been successfully cut from the sandstone quarries at Houghton Point, Wis. It is supposed to be the longest monolith ever quarried.

For a short distance a lion or a tiger can outrun a man, and can equal the speed of a fast horse, but the animals lose their wind at the end of about half a mile. They have little endurance, and are remarkably weak in lung power.

The peculiarity of a cork leg is that apart from the name there isn't a vestige of cork about it. The origin of the term comes, it is said, from the fact that nearly all the great manufacturers of such articles used to live on Cork street, Piccadilly.

It is said that Chinese cannot be telegraphed, but that figures have to be used, which correspond to certain words. This code includes only about one-eighth of the words in the language, though this has been found sufficient for practical purpose.

A young woman in Chicago supports herself by taking care of other people's birds and flowers. She goes daily from house to house, feeding and watering pet birds and cleaning their cages. She then turns her attention to the plants and window boxes, cleansing leaves and giving a dose of fertilizer when needed, and in other ways keeping her feathered and floral patients in excellent condition.

According to the Buddhist form of religion a man lives twelve times on earth, his soul returning after each demise to some animal, beginning with one of the lower varieties, like a reptile, a crocodile, or a wolf, and then each time he dies afterward, returning to some animal of a higher type. In this way there is a general progression of the soul until it reaches the animal representing the highest type of all, which is the white elephant.

He—you always remind me of something very disagreeable. She—Sir! I—I—. He—Yes, you remind me of all the time I have to spend where I can't see you. And the clouds lifted.—Philadelphia Bulletin.

DOMESTIC ECONOMY.

Domestic Hints.

BAKED APPLE.—Wash and core a sour apple. Place in an earthen or graniteware pan and put two teaspoonfuls of sugar in the core. Put one tablespoonful of water in the pan. Bake in a hot oven until soft. Cinnamon, nutmeg or grated lemon rind may be added to the sugar if desired.

PIE CRUST.—Take one quart of flour and rub into it a cupful of butter or lard, add a teaspoonful of salt, and enough very cold water to make a stiff dough. Mix with as little handling as possible, and put on ice or in a cool place, an hour before using; roll out thin, put in the filling, and spread a little butter on the upper crust before baking.

PULLED CREAM CANDY.—In a good-sized saucepan put two pounds of granulated sugar, one tablespoonful of butter, one-half of a cupful of cream and one and one-half cupfuls of water. Boil slowly but steadily until a spoonful, dropped into cold water, can be rolled into a firm ball. Add one-quarter of a teaspoonful of soda, take from the fire, add one teaspoonful of vanilla, and pour on a greased platter. Pull as soon as cool enough to handle.

MINCE MEAT.—One pound of chopped apples, one pound of stoned raisins, one pound of suet chopped very fine, one-half pound of mixed citron and orange peel chopped fine, one-half ounce of mixed spice, one pound of sugar, one teaspoonful of salt. Mix all together thoroughly, add enough water to moisten, and cook for one hour. Then add one-half pint of good whisky or brandy. When making the pies, add a little more sugar if not sweet enough.

PLUNKETS.—Cream one-half of a pound of butter, add gradually one-half a pound of granulated sugar and beat to a cream. Beat the white and yolk of six eggs separately, beating the whites to a stiff froth, add the yolks to the whites, stir into the butter and sugar and mix well. Mix one-half of a cupful of flour with three-quarters of a cupful of cornstarch, add one teaspoonful of baking powder and sift twice; add to the other mixture, stirring until well mixed; add one teaspoonful of vanilla, pour into greased patty pan and bake in a moderate oven.

RYE SHORTCAKE TOAST.—Mix one cup flour, one cup rye flour, half a teaspoon salt, one tablespoonful sugar and two level teaspoons baking powder. Add one tablespoon melted butter and mild enough—about one cup—to make a dough that can be kneaded and rolled. Mould it thin, roll out quite thin, cut into rounds and bake quickly. While they are baking make one cup of

white sauce with one cup hot cream or milk, one level teaspoonful each butter and cornstarch and one-quarter teaspoon salt. When the cakes are done split them open and lay on a dish with the hot cream over them and serve very hot.

Hints to Housekeepers.

Meat is the most costly and extravagant of all articles of food. Consequently, save every bit and work it over.

Sinks, drains, and all impure places that become sour and impure should be cleaned with carbolic acid and water.

A half glass of tepid water with a heaping teaspoonful each of salt and dry mustard is an antidote for most any kind of poison.

In taking down the stove, if any soot should fall upon the carpet or rug, cover quickly with dry salt before sweeping and not a mark will be left.

Some one advises that the stringy coat left on bananas after they are peeled should be removed before eating. It is this, like the white, pithy underskin of an orange, which is indigestible.

To those who study the niceties of detail in the preparation of even a simple dish, it may be suggested that chocolate used as a dish is much improved if blended several hours beforehand. It is better even to break the lumps of unsweetened chocolate into an earthen bowl the night before, adding cold water and covering closely. In this way the flavor of the chocolate is best extracted.

Save every bone, whether beef, mutton, veal, poultry or game, as well as all juices in the meat dishes, for the stock pot. Into this storehouse of wealth, for such the stock pot is, go the tough ends from the rib roasts, which would only become tasteless and dry if roasted; also the fat ends cut from mutton chops, the bone left from sirloin steak, and the carcasses from either poultry or game, as well as the bones from the roasting pieces.

The flour barrel should be kept a few inches from the floor, so that it will not gather dampness. There is an ingenious method by means of which this is accomplished and the barrel kept under a shelf in a small pantry secure from dust. By this method it is suspended a few inches from the floor on springs, which are attached to the sides of the pantry. When it is necessary to get it to the floor the barrel, by means of the springs which support it, may be swung from under the shelf. Two beams, 2x2 inches square, placed under the barrel, a little apart, will answer equally well to ventilate the bottom.

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Yours truly, WM. E. COGGESHALL.
Newport P. O., R. I., June 18th, 1897.

What 'Bijah Hawkins Found.

(Continued from page 184.)

Then, turning to Miss Dobbs, he continued—

"Sam Wyckoff'll think it ain't such a bad bargain, after all, Adzette. There's neither chick nor kin to claim it, and old Tom told me he wanted to give me something for helping him when he was sick, too."

News of this importance needed no repetition before Miss Dobbs, and before night the Four Corners knew that 'Bijah Hawkins had been rewarded for his purchase by finding a large amount of money.

"Fourteen hundred and seventy-six dollars!" said 'Bijah, the next morning, in answer to the inquiries of the villagers. "Pretty good interest on twenty dollars, ain't it?" he asked Sam Wyckoff, who had hastened to congratulate him.

As for Mrs. Hawkins, her cup was full. Within two days her new silk had been bought, Sarah Perkins had been engaged for the winter, and 'Bijah, in the flush of sudden wealth, had promised her a bay window for her plants. This magnanimous treatment from her husband was received by her with becoming gratitude, and she had offered to wait until he had deposited the money in bank before she did her shopping. But 'Bijah was so loth to part with his new-found treasure that he gave her the money for her purchases out of his own pocket-book rather than break the precious package, and sent her on her way, saying that he would deposit the money next week, when he would be going to Hadleyville.

The consciousness of ownership was so enjoyable and so strong that he almost dreaded the day when the money would leave his possession. He counted and recounted the worn old bills, each time feeling an added satisfaction in the action, as he had never before handled or come in contact with such a quantity of money.

Early on the following Monday he and Sam Wyckoff started for Hadleyville. 'Bijah was in a jovial mood throughout the drive; the money was securely fastened in his coat pocket by means of large shawl pins, and as they rode along he went over the story of his purchase, laying special emphasis upon the shrewdness of his judgment, and then in a self-commendatory manner telling what he had done for Mrs. Hawkins.

Sam kept his own counsel, for he well knew the measure of 'Bijah's generosity prior to the finding of the money.

After reaching Hadleyville they stopped at the first bank, and with an air of importance 'Bijah, accompanied by Sam, stepped forward to the teller's desk.

"I've got a deposit that'll kinder surprise you this mornin', Mr. Daniels," said he to the teller.

"Glad to hear it, Mr. Hawkins."

"There it is," said 'Bijah, triumphantly, slapping the bundle of bank notes down upon the receiving plate.

"Pshaw!" whistled the teller, humoring the depositor's whim. "That's quite a pile."

No sooner had the first bill slipped through his fingers than he stopped counting, gave the bill a sudden snap, smoothed it out and laid it aside. This process he repeated with bills taken at random from the pile, then rapidly counted the package. Gathering the bills together, he walked over to the cashier. A conversation followed, carried on in low tones, after which the cashier walked to the vault, from which

he took a package of bills. These he compared with 'Bijah's, and the comparison appeared to confirm some opinion held by himself and the teller, for they turned and looked suspiciously toward the depositor.

'Bijah, who had followed every motion with increasing uneasiness, demanded anxiously,—

"What's the matter with the bills? Ain't they good?"

"Where did you get this package of money, Mr. Hawkins?" inquired the cashier, an old gray-haired man.

"Why, I found 'em," replied 'Bijah, forthwith giving a hasty account of the notes' history.

The cashier listened attentively to the story, and, at its conclusion, said simply—

"I'm sorry, Mr. Hawkins, but those bills are counterfeit."

"What," cried 'Bijah, "counterfeits? How do you know?"

"How do I know?" repeated the cashier, somewhat nettled. "How do you know a sound pumpkin from a bad one? Experience? Yes. Well, that's the way we know counterfeit money from genuine. Furthermore, Mr. Hawkins, we have evidence which cannot be questioned. Thomas Miner's brother was at one time cashier of this bank. Through his agency we lost a considerable sum of money, but he was saved from prosecution by Thomas Miner, who made good the loss. You do not know, however, by what method the bank was robbed. I will tell you. Miner, when he was cashier, in some way became the tool of a gang of counterfeiters. The 'queer' was placed with him, and he exchanged it for the bank's good bills. This system of theft was at last discovered, and counterfeit money aggregating a large amount was found among our packages. Those bills just now taken from the vault for the purpose of comparison were some of the original lot. Those brought by you are precisely of the same issue."

During this explanation 'Bijah's face had expressed successively doubt, greed, exasperation and finally despair. At the conclusion of the cashier's story he said, slowly, in a weak voice:

"It must be as you say. If the money's bad, burn it up."

Motioning to Sam to follow, he left the bank, nor did he open his lips during the return journey.

That night he told Mrs. Hawkins of the day's disclosures, concluding, disconsolately:

"I mean to stand by my word, Jane; you can keep your silk dress and Sarah, too, and I'll put in that bay window; but never let me hear one more word about old Tom's money. Once being such a fool's enough!"

And it was. As for Adzette Dobbs, she declared that 'Bijah found something else besides counterfeits in the old floor beams, and that something was a meek an' openhanded bearin'—J. H. Mead.

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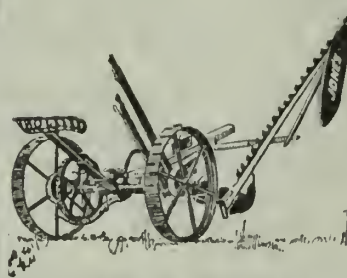
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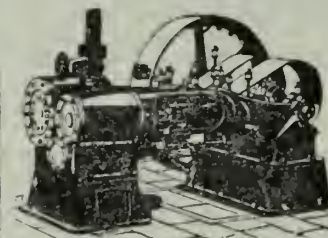
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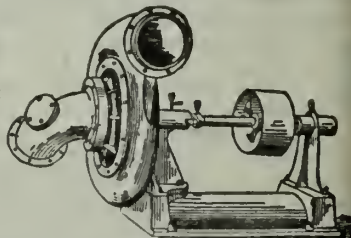
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Coast Industrial Notes.

--All this present war talk emphasizes the immediate need of the Nicaragua canal.

--California shipyards are turning out new iron and wooden vessels for the Klondike transportation trade.

--The total shipment of oranges from Riverside for the season up to Feb. 26th was 610,779 boxes. This is a greater shipment than was sent out up to the same date last season.

--Los Angeles oil producers' trustees report a new contract with a San Francisco firm for 1000 barrels a month. That brings their total contracts for delivery at San Francisco up to 10,000 barrels a month. They believe they will be able to double this before long.

--The United States Government will next week send an expedition from Vancouver, Wash., to find a practicable route up the Copper river, Alaska, to the Yukon basin. Fifty men and three officers of the Fourteenth Infantry will leave Vancouver on March 15th.

--Property including 1,000,000 feet sugar pine on the Klamath river and a sawmill at Klamath, Or., is being bought by F. Carney of Marinette, Wis., J. H. Wilbeck of Chicago, and Messrs. Ducey of Detroit for \$1,000,000. San Francisco lawyers are now getting titles in shape for the transaction.

--In San Luis Obispo and Santa Barbara counties, Cal., there remains fifty-five miles of the railway in the Coast division gap to be built. About 1000 men will be put on. It will take ten months to finish. When completed, the through East-bound passenger trains will be run over that route.

--The Santa Cruz powder works are busy day and night. Four new presses have been received for the manufacture of smokeless powder, an additional output of 4000 pounds of smokeless powder daily. The capacity of the works is now two and a half tons of Government powder daily, and nine tons of black powder.

--Trade in California sweet wines shows an increase. The total estimated product for this year is 3,000,000 gallons, 25 per cent more than last year. Heretofore there has been little profit in the vintage because of the fierce competition of growers; the producers have now made arrangements with a sweet-wine syndicate which will control the entire product of the State and give all concerned some share in the profit.

--On the new Siberian railway 5000 miles of steel rails have been laid already at a cost of 350,000,000 rubles. July 1, 1904, it is thought, will see locomotives running from the shores of the North to those of the Japan sea. Within eighteen months trains are to run over the Siberian road to the Amoor river. Thence, by fast steamer, passengers and freight are to be pushed on to Chaborowka; thence, in eighteen hours, over the South Russian section of the Siberian road to Vladivostok, making the distance from England to the most important harbor of the Japan sea seventeen and one-half days. It is estimated that when the road is in working order, after the first few years and high rates of speed across Siberia are attained, the entire trip will be made in nine days and two hours.

--To exporters of merchandise or machinery to Mexico it is of great importance that everything be packed in accordance with the customs regulations of Mexico, and in such a way as to insure an immediate and proper tariff classification. Some of these regulations are different from those of the United States customs houses. Some of them are apparently unnecessary and vexatious, and the energetic American shipper will probably make complaint if he happens to make a mistake and is fined or delayed in his business; but when the American crosses the boundary of his own country he is among a people who do as he does when at home--run their own business to suit themselves. However peculiar their ways may seem, however complicated their red tape may run, no matter how many old-fashioned ways may prevail or how many improvements might be suggested, their way of doing business is their own and they have the right to enforce it. The country is theirs, and the American who goes abroad with fixed standards of comparison, ironclad ideas of how he is going to do business in another man's country, is doomed to vexation, trouble, expense and disappointment. The importance of this matter of packing goods purely for the Mexican market is so great as to be the principal reason why many articles which should be furnished by the United States are still bought in Europe by Mexico. A few American firms have made an exhaustive study of conditions in Mexico and humor the trade in every possible way. The result is they have a large and profitable business which they have earned and which they keep by adapting it to the needs of the country and the whims of the people. The manner in which the trade in packing-house goods has been built up is an excellent illustration of this. It was found by the Armour Packing Company that the empty coal-oil cans were used by the Mexicans to pack lard in. The cans were cheap, of convenient size to handle and easily packed on the back of a burro. The suggestion was sufficient, and now the Armour Company ships lard to Mexico in tin packages made to resemble the regular five-gallon coal-oil can. The whims of the trade are shown in the experience of a New York firm selling large quantities of candles. By persistent work they built a big trade in Mexico. One brand of their candles was especially popular. These candles were wrapped in blue paper and sold in immense quantities. For some reason or other the color of the paper was changed to red. The results were disastrous. The sale of the candles suddenly stopped. Their agents in Mexico told them that the people kept asking for the candles done in blue paper and would take no other, as they could not be convinced they were the

same goods. The New York firm finally sent over a lot of blue wrappers and they were substituted for the red ones. The candles again sold freely and the business of lighting Mexican houses with American candles continues with profit to all concerned.

--A large work now going on is the tunnel of the Great Northern railroad in the Cascade mountains, western Washington. The formation at the east portal is solid rock; on the western end there is much earth interlaid with large boulders. Much progress has already been made at both ends, but, as the total length is to be considerably in excess of 13,000 feet, it is estimated that two years will be required for its completion. The east portal of the tunnel is at an elevation of 3400 feet above sea level, and, as it drops nearly 300 feet in the length, makes a grade of 1.7 per hundred, sloping toward the west; such a grade will furnish drainage and will also provide a draft for smoke.

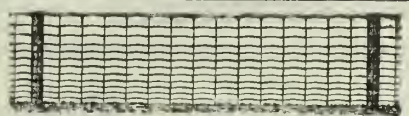
--G. Toppe, director Imperial Steel Works at Yawatamura, Japan, has been in the United States for two months, inspecting steel plants. He says: "The object of my visit to this country is to study the construction of the largest steel plants, the machinery used, the methods employed and, in general, everything pertaining to the iron and steel industry. Japan is building a large steel plant, and they want to embody the largest and most improved ideas in construction, machinery and methods of work. The Imperial Steel Works, which I represent, are being built by the Japanese government, and is the first steel or iron plant ever constructed in that country. Japan has hitherto been buying all her steel and iron from foreign countries. This steel plant will be situated at Yawatamura, a town of about 10,000 inhabitants, on the extreme northern end of the island of Kishiu. The island is very rich in coal. This industry is almost new, but over 3,000,000 tons of coal are now being taken out yearly. The ore beds from which we will get our supply of iron ore are on the island of Honshu, which is a mile north of Kishiu. Honshu is the main island of Japan, and contains Tokio, the capital. The ore will be brought from one island to the other on a ferry boat, thus saving reloading. The works will cost \$10,000,000 and will be in operation in about three years. I do not know how many men will be employed, but there will be about thirty skilled mechanics from other countries to serve as heads of various departments. In the beginning the yearly capacity of this plant will be 100,000 tons; but this will be greatly increased later on. The products of this plant will be steel rails for railroads, steel plates for ships, boiler plate, bar and structural iron."

About half the lamp-chimneys in use are Macbeth's.

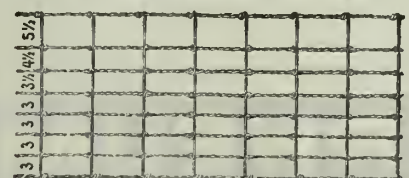
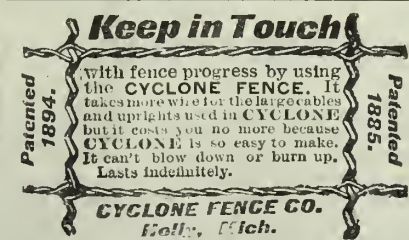
All the trouble comes of the other half.

But go by the Index.

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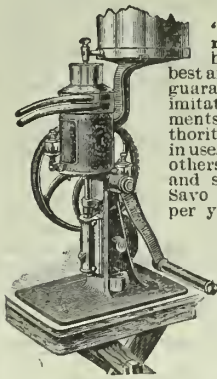


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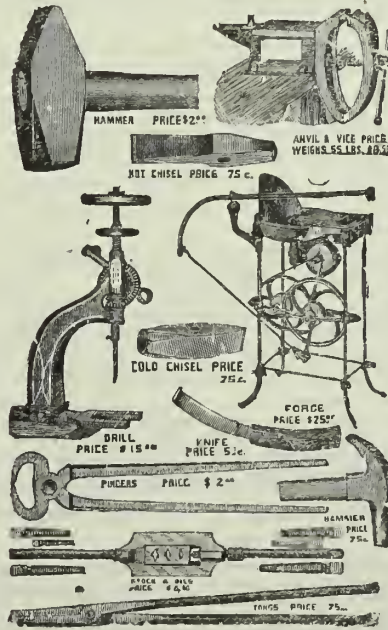


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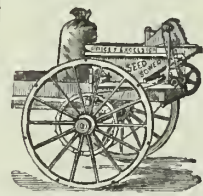
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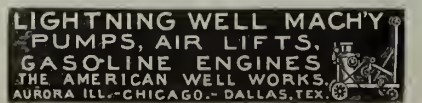


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List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING MARCH 1, 1898.

600,055.—BOTTLE LOCK—S. Adler, S. F.
599,923.—TRUCK—E. C. Atwood, Golden Gate, Cal.
599,824.—COUPLING FOR TAPPET CAMS—T. J. Barbour, S. F.
600,116.—SWINGING COT—J. H. Benning, S. F.
599,926.—CONCENTRATING BELT—W. F. Bowers, S. F.
600,059.—MUD DRUM AND BOILER—W. J. Brady, S. F.
599,830.—STEAM ENGINE—A. E. Cobb, Phoenix, A. T.
600,109.—RING SLIDE FOR ROPES—C. A. Conger, Oakland, Cal.
600,110.—EYE FOR ROPE HALTERS—C. A. Conger, Oakland, Cal.
600,111.—SEWING MACHINE—N. P. Duncan, Hanford, Cal.
599,895.—WRENCH—English & Stranahan, Portland, Or.
599,960.—ENVELOPE—P. E. Gillette, Grass Valley, Cal.
599,898.—CHECK REIN HOLDER—O. Gravelle, Spokane, Wash.
599,701.—GOLD SAVING APPARATUS—G. Griesche, Berkeley, Cal.
599,845.—WATER WHEEL BUCKET—E. P. Jones, Alameda, Cal.
599,847.—RAILROAD SWITCH—B. J. Kelly, Corvallis, Or.
599,717.—PICK—J. H. Maddux, San Luis Obispo, Cal.
599,856.—LEMON SQUEEZER—E. J. Middlekauff, S. F.
599,974.—PNEUMATIC TIRE—O. H. Packer, Junction, Nev.
599,733.—HANDLE BAR—O. R. Pihl, Portland, Or.
599,871.—CLOTHES DRIER—J. L. Siefkes, West Point, Cal.
599,743.—NITRATES—E. A. Starke, San Rafael, Cal.
599,741.—BROOM HOLDER—H. L. Steinmeyer, Sacramento, Cal.
599,745.—SASH FASTENER—H. L. Steinmeyer, Sacramento, Cal.
600,100.—PIPE VISE BENCH—G. F. Tong, Sacramento, Cal.
599,819.—GOLD SAVING APPARATUS—E. L. Weed, Ellensburg, Or.
599,756.—WAVE MOTOR—P. Wright, Los Angeles, Cal.
28,338.—DESIGN, GAME BOARD—G. L. Smith, Paton, Cal.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s Scientific Press U. S. and Foreign Patent Agency, the following are worthy of special mention:

PICKS.—James H. Maddux, San Luis Obispo, Cal. No. 599,717. Dated March 1, 1898. The object of this invention is to provide easily detachable and removable points for picks, with means for locking them securely to the main portion or stop, so that they cannot be disengaged or loosened by use, while they are easily removable and replaceable when worn out. It consists of a central eye, or socket, having outwardly projecting arms with separable points, the meeting ends of the arms and points being halved together in planes parallel with the handle, having longitudinal projecting ribs and channels upon the meeting faces and dovetail pins by which the parts are locked, and a bolt or bolts passing through so as to secure all parts solidly together.

ADJUSTABLE PORTABLE PIPE VISE BENCH.—George F. Tong, Sacramento, Cal.; one-half interest assigned to M. K. Barrett of same place. No. 600,100. Dated March 1, 1898. This invention relates to a portable bench which is especially designed as a support for vises for pipe and screw thread cutting devices. It consists essentially of a heavy table having hinged to its lower surface at the edges legs which diverge widely from their point of hinging to the bench so as to form a wide-based tripod. In conjunction with these legs are brace bars, also pivoted or fulcrumed to the lower part of the bench extending diagonally downward, having clamps by which they are adjustably locked upon the main legs so that the latter are held firmly in place. The lower part of the legs are provided with means to receive transverse bars, which prevent their sinking deeply into the ground, and they also have means for holding them in place.

APPARATUS FOR SEPARATING AND SAVING PRECIOUS METALS.—Gustav Griesche, East Berkeley, Cal. No. 599,701. Dated March 1, 1898. This invention relates to an apparatus which is designed to separate heavy valuable or precious metals from sand, gravel or other gangue with which they may be found associated in a free condition. It consists essentially of a tapering revolvable screen mounted upon horizontal shafts, means for supplying the material to be separated to said screens, semi-circular collecting troughs surrounding the lower part of the screens having discharge chutes opening from them and a series of oscillating troughs inclined upwardly from the receiving toward the discharged ends, said troughs being divided into separate compartments and having independent agitated blades mounted upon the longitudinally centrally disposed shaft and revolvable independently within the compartments with means for varying the inclination of the troughs. A suitable supply device is adapted to deliver the material into the apparatus, and a discharge chute at the end conveys away the worthless material after the separation is complete.

MUD DRUM AND BOILER CONNECTION.—Wm. J. Brady, San Francisco, Cal. No. 600,059. Dated March 1, 1898. This invention relates to an improvement in mud drum connection for hollers. It consists essentially in a means for detachably connecting the drum with one

or more hollers, a means for making a more perfect joint between the connecting nozzle and the drum by the use of compensating plates to which the flanges of the nozzles are first riveted, the plates being afterwards riveted to the mud drums.

BOTTLE LOCKING DEVICE.—Solomon Adler, San Francisco, Cal. No. 600,055. Dated March 1, 1898. This invention relates to a device which is especially designed to lock the stoppers of bottles to prevent the bottle being surreptitiously opened. It consists essentially of a cap adapted to fit and enclose the bottle stopper arms extending downwardly upon each side from the cap and movably pivoted thereto, a jointed rim fixed to the lower end of the arms adapted to close around the neck of the bottle below the enlargement at the top, this rim being made of segmental plates having such radial diameter as to make them rigid in that direction, and with this a means for adjusting the rim to fit any sized bottle neck and means for locking it when it is so adjusted.

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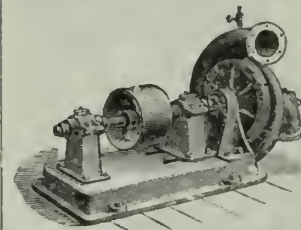


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S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, March 16, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|-----------------------|--------------------|
| Wednesday..... | \$1 05 1/4 @ 1 04 1/2 | \$ 91 1/2 @ 90 1/2 |
| Thursday..... | 1 04 1/4 @ 1 04 | 90 1/2 @ 90 1/2 |
| Friday..... | 1 03 1/4 @ 1 04 1/2 | 90 1/4 @ 88 1/2 |
| Saturday..... | 1 04 @ 1 04 1/2 | 86 1/4 @ 87 1/2 |
| Monday..... | 1 04 1/4 @ 1 04 | 88 @ 86 1/2 |
| Tuesday..... | 1 05 @ 1 04 | 87 1/2 @ 85 1/2 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|------------|------------|
| Wednesday..... | 7s 5 1/2 d | 7s 2 d |
| Thursday..... | 7s 5 1/2 d | 7s 1 1/2 d |
| Friday..... | 7s 5 1/2 d | 7s 1 1/2 d |
| Saturday..... | 7s 5 1/2 d | 7s 1 1/2 d |
| Monday..... | 7s 5 1/2 d | 7s 1 1/2 d |
| Tuesday..... | 7s 5 1/2 d | 7s 1 1/2 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|---------------------|---------------------|
| Thursday..... | \$1 41 1/4 @ 1 41 | \$1 35 @ 1 34 |
| Friday..... | 1 40 1/4 @ — | 1 34 @ 1 33 1/2 |
| Saturday..... | 1 39 1/4 @ 1 40 | 1 32 1/2 @ 1 33 |
| Monday..... | 1 40 1/4 @ 1 41 | 1 33 @ 1 33 1/2 |
| Tuesday..... | 1 40 1/4 @ 1 40 | 1 33 1/2 @ 1 32 1/2 |
| Wednesday..... | 1 39 1/4 @ 1 39 1/2 | 1 32 1/2 @ 1 33 |

Wheat.

If there is any difference to note, the local wheat market is less favorable to buyers than a week ago, but the strength is wholly attributable to dry weather influences. Quotations remain practically the same as at date of last review. Holders are in most instances either asking higher figures or have withdrawn wholly from the market for the time being. The little doing in spot wheat is principally on milling account. Exporters claim they are unable to operate at present. Not a ship has been added to the engaged list for wheat during the past fortnight, which is a rare occurrence. The market for both wheat charters and for shipping wheat is stagnant. Chicago and Liverpool are lower than last week, making it difficult to establish an advance here, or even to maintain former values on export wheat. A change may be, however, speedily brought about. A little rainy weather in the interior at points where most needed, or a slight hardening in values abroad, would soon establish a revival of activity in the export trade.

Conditions as to prospects for coming crop have not changed materially since preceding review. Nearly all sorts of weather have been experienced, but not much of the right sort. It is hoped that in the commotion of the elements rain will be precipitated throughout the State, and in sufficiently liberal quantity, as also in time, to be of material benefit. Between the hot weather and the cold north winds of the past week, the latter were to be preferred, being more seasonable and more apt to be followed by moist weather than the former.

Shippers are complaining about their inability to secure a satisfactory market abroad, attributing the dullness in cargoes, and the relatively lower values in foreign centers than are current here, to the monthly option system in the speculative markets. Owing to the low prices current most of the current season in options, foreign millers and dealers have been supplying their wants mainly through deliveries on monthly contracts purchased ahead. This leaves them in a great measure independent of the immediate or spot market. They look for their wheat to the speculator who has sold short. The short interest does all in its power to keep the market depressed after selling, for in no other way can the shorts or bears make a profit. This is another illustration of how speculative manipulation in grain tends to operate against the producing interest. The Leiter crowd, so prominent recently in Chicago grain circles, is still being paraded in the telegraphic news of the daily press as going to bring forth some extraordinary developments, but when this is to take place remains to be stated. One day the Leiter combine is in a fair way to control all the surplus wheat of the country, and the next day the combine is unloading in blocks of several million bushels, just as though such quantities cut no great figure in its supplies. These sensational dispatches are largely gush, little attention being paid to facts. It is remarkable as well as deplorable that such sensational stuff is given space almost daily by papers pretending to serve the best interests of the public.

California Milling.....\$1 42 1/4 @ 1 50
Cal. No. 1 shipping, alongside.....1 40 @ 1 41 1/2

| | |
|----------------------------|-----------------|
| Oregon Valley..... | 1 37 1/2 @ 1 40 |
| Walla Walla Blue Stem..... | 1 40 @ 1 45 |
| Walla Walla Club..... | 1 35 @ 1 40 |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 white wheat per cental for the week were as follows for the options named:

May, 1898, delivery, \$1.41 1/4 @ 1.39 1/2.
December, 1898, delivery, \$1.35 @ 1.32 1/2.

Wednesday, at regular noon session of Call Board, May wheat sold at \$1.39 1/2 @ 1.39 1/2; December, 1898, \$1.32 1/2 @ 1.33.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|---------------------|---------------------|
| Liv. quotations..... | 65 1/2 d @ 65 1/2 d | 75 1/2 d @ 75 1/2 d |
| Freight rates..... | 15 @ 16 1/4 s | 25 @ 27 1/4 s |
| Local market..... | \$1.35 @ 1.40 | \$1.40 @ 1.42 1/2 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

Business in this commodity is of a light order on local account. There is a moderate outward movement, but it is principally of flour furnished on contracts and in nowise affects the immediate market. Spot supplies are not of heavy volume, but are more than enough for present needs. Values are without quotable change.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | \$3 00 @ 3 25 |
| Superfine, good to choice..... | 3 35 @ 3 60 |
| Country grades, extras..... | 4 00 @ 4 25 |
| Choice and extra choice..... | 4 25 @ 4 50 |
| Fancy brands, jobbing..... | 4 50 @ 4 65 |
| Oregon, Bakers' extra..... | 3 90 @ 4 25 |
| Walla Walla, Bakers' extra..... | 3 90 @ 4 25 |

Barley.

This market as regards values has not drifted far from the position occupied a week ago. The tendency was down or up, as the weather was favorable or otherwise for the coming yield. Values in the sample market did not fluctuate to any very marked degree, however, as buyers were not inclined to operate at dry weather prices, and sellers refused to let go at what might be denominated wet weather figures, or such values as would be considered reasonable with fairly good crop prospects. The light spot stocks operate in favor of the selling interest, as no matter what the coming yield may be, there is not likely to be much barley carried over into the next harvest year. Call Board values averaged higher than preceding week.

| | |
|---------------------------------|-----------------|
| Feed, No. 1 to choice..... | 1 00 @ 1 12 1/2 |
| Feed, fair to good..... | 1 07 1/2 @ 1 10 |
| Brewing, No. 1 to choice..... | 1 12 1/2 @ 1 20 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

May, 1898, delivery, \$1.06 1/2 @ 1.09.
December, 1898, delivery, 99 @ 96 1/2 c.

Wednesday at regular noon session of the Call Board May, 1898, feed sold at \$1.08 @ 1.08 1/2; Dec., 1898, 96 1/2 @ 97 c.

Oats.

The market is moderately firm for both feed and milling oats, but transfers at extreme current rates are mainly of small parcels to cover immediate and urgent requirements. Supplies are of fair proportions, but are mostly in strong hands, and it is the exception where any undue selling pressure is exerted. Stocks and offerings are confined principally to White oats, with moderate quantities of Gray and Surprise. There are few Black or Red oats on market, and, aside for a limited demand for seed, there is scarcely any inquiry for them.

| | |
|-------------------------------|---------------------|
| White Oats, fancy feed..... | 1 22 1/2 @ 1 25 |
| White, good to choice..... | 1 17 1/2 @ 1 22 1/2 |
| White, poor to fair..... | 1 12 1/2 @ 1 15 |
| Gray, common to choice..... | 1 15 @ 1 22 1/2 |
| Milling..... | 1 20 @ 1 22 1/2 |
| Surprise, good to choice..... | 1 20 @ 1 30 |
| Black Russian..... | 1 20 @ 1 40 |
| Red..... | 1 15 @ 1 40 |

Corn.

The market for domestic product continues quiet, quotable values remaining about as last noted. Local dealers are still running principally on Eastern corn, and prices for the home article are in consequence not very well defined. Holders are in many, if not most, instances asking an advance on figures warranted as a quotation, while buyers are contenting for lower figures than below noted.

| | |
|----------------------------------|-----------------|
| Large White, good to choice..... | 1 05 @ 1 07 1/2 |
| Large Yellow..... | 1 05 @ 1 07 1/2 |
| Small Yellow..... | 1 10 @ 1 12 1/2 |
| Eastern Yellow..... | 1 02 1/2 @ 1 05 |
| Egyptian White..... | — @ — |
| Popcorn, shelled, 1/2 lb..... | — @ — |

Rye.

There are only limited local requirements, but these are sufficient to absorb all present offerings.

Good to choice, new.....1.05 @ 1 07 1/2

Buckwheat.

Owing to absence of sellers, there is so little doing in this cereal that any quotations

which may be given are little more than nominal.

| | |
|---------------------|-------------|
| Good to choice..... | 1 75 @ 1 90 |
| Silverskin..... | — @ — |

Beans.

Market is not showing much activity, but is moderately firm for most varieties of white beans, especially Lady Washington and Small White, trade running largely on these two kinds. Limas were held about as last quoted, but to have secured prompt custom the acceptance of lower rates would have been necessary. Values for colored beans were not very steady. The anticipated urgent demand for Bayos on Klondike account has thus far failed to develop. Pinks moved upward some weeks ago, in sympathy with Bayos, and the failure of the latter to sell freely at the advance recently established imparts an easy tone to the market for Pinks. In the market for Red beans there has been very little done this season.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 50 @ 1 60 |
| Small White, good to choice..... | 1 50 @ 1 65 |
| Lady Washington..... | 1 45 @ 1 55 |
| Butter, small..... | 1 45 @ 1 55 |
| Butter, large..... | 1 60 @ 1 75 |
| Pinks..... | 2 35 @ 2 60 |
| Bayos, good to choice..... | 2 80 @ 2 90 |
| Reds..... | 2 00 @ 2 25 |
| Red Kidneys..... | 2 00 @ 2 25 |
| Limas, good to choice..... | 2 00 @ 2 15 |
| Black-eye Beans..... | 2 25 @ 2 50 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

Recent advices by mail from New York furnish the following concerning the bean market, prices quoted being per bushel of 60 lbs.:

Exporters came on the market again early in the week and took nearly 2000 bbls. of Marrow beans at \$1.37 1/2 @ 1.40, and while the business has since been quiet the feeling has not changed, most holders taking a very steady view of the situation. The unprecedented demand for white beans from the West Indies since the first of the year has been a great surprise to the trade here, and the query now is will that demand continue or was it the result of some peculiar circumstances that may be relieved at any time? We understand that the crop of beans in Spain and other countries that have heretofore supplied the Spanish colonies is short, and that attention has been turned here in consequence. Then, again, it is asserted by some that merchants in the West Indies have been buying heavily in order to be well stocked in the event of serious trouble between the United States and Spain. Whatever may have occasioned the extra call from there, it has been and is still a potent factor in shaping the course of values here. Without that outlet no one could tell what the beans would be worth, as there evidently was a large crop of them. A great many Canadian Medium in bond have been going to exporters, but the demand here for State stock is very moderate; some holders ask a little more than \$1.15 for choice lots, but that figure is generally accepted. Pea have sold slowly, and while most sales of best goods have been at \$1.15, slight concessions were occasionally obtainable. Exporters have had only moderate orders for Red Kidney and this has caused a slightly easier feeling in consequence; most of the sales were \$1.67 1/2 f. o. b., and some nice stock can be bought at \$1.65. White Kidney steady but quiet. Turtle Soup very dull and barely steady. Yellow Eye neglected. Less inquiry for Lima and the wire edge is off the market; now held at \$1.52 1/4 @ 1.55. Green peas moving very slowly.

Dried Peas.

There are few domestic arriving, and no urgent demand just now for either Green or Niles. Values remain undisturbed.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 75 @ 1 90 |
| Niles Peas..... | 1 40 @ 1 50 |

Hops.

Market in this center is quiet, probably more due to limited offerings than to any other cause. Prices show no appreciable change, but transfers at extreme figures are confined to small parcels from the hands of jobbers. There was little outward movement the past week by sea, and no evidence of any considerable quantity going forward to the East by rail.

Good to choice, 1897 crop.....12 @ 16

A New York authority, under recent date, the advices coming through by mail, gives the condition of the hop market as follows:

Trade has moved along very quietly again this week, but there has been no change in the tone of the market nor in prices. Brewers have not shown much interest, most of them having supplies for present needs; but the consumption of beer goes on steadily, sales for January, as indicated by the purchase of internal revenue stamps, showing an increase of about 10 per cent over the same month last year. Brewing for the summer stocks has already commenced, and the reserve holdings of hops will be drawn on more largely than during the winter. Nearly six months remain before another crop will be available. But the chief source of strength is the demand from Europe. English buyers are still calling for goods, and besides the purchased stock a good many consigned lots of Pacifics are going abroad. There is no doubt that shippers would be glad to get some of the high-class stock that was taken earlier in the season, and very full prices would be paid for such were it available. Both cable and mail advices are very firm. Previous reports of strength are fully confirmed by the London *Grocer* of recent date, which says that a further advance has been established. The country markets are quiet because there is not much to buy. By actual count it is shown that only 1300 bales remain unsold in Madison county.

Wool.

A few small lots of Spring clip have arrived, but no business is reported in them, and there will probably be nothing of consequence done for several weeks. The tolerably heavy stocks of Fall wool still remaining on hand will have to be carried into the Spring season. Eastern markets are reported exceedingly quiet, particularly for Pacific Coast wools. When Spring fleeces are here in sufficient quantity to admit of wholesale operations, there will likely be some activity experienced. Quotable values remain nominally as before.

SPRING.

Oregon Eastern, choice.....13 @ 15

Oregon Eastern, fair to good.....10 @ 12

FALL.

| | |
|----------------------------|-----------|
| Middle County, free..... | 10 @ 13 |
| Northern, free..... | 11 @ 14 |
| Southern Mountain..... | 9 @ 12 |
| San Joaquin defective..... | 7 @ 8 1/2 |

Hay and Straw.

There has been a decided change in the tone of the hay market since former review and a sharp recovery in values. For best qualities of stable hay prices touched the highest figures of the season. Dry weather in most of the hay producing sections and light stocks now on hand established the higher rates. Rains where most needed during the next week or ten days would cause an easier tone to prevail. Straw was in light receipt, but prices were without quotable appreciation.

| | |
|----------------------|---------------|
| Wheat..... | 17 00 @ 22 00 |
| Wheat and Oat..... | 15 00 @ 20 00 |
| Oat..... | 15 00 @ 18 00 |
| Barley..... | 13 00 @ 17 00 |
| Clover..... | 12 00 @ 14 00 |
| Stock Hay..... | 10 00 @ 12 00 |
| Alfalfa..... | 10 00 @ 12 00 |
| Compressed..... | 17 00 @ 22 00 |
| Straw, 3/4 bale..... | 40 @ 50 |

Millstuffs.

Values for bran have continued about as last quoted, but the market showed an improved tone. Middlings ruled fairly steady. Rolled barley tended against buyers. Milled corn went at unchanged figures.

| | |
|---------------------|---------------|
| Bran, 3/4 ton..... | 15 50 @ 16 50 |
| Middlings..... | 18 00 @ 23 00 |
| Barley, Rolled..... | 23 50 @ 24 50 |
| Cornmeal..... | 23 00 @ 23 50 |
| Cracked Corn..... | 23 50 @ 24 00 |

Seeds.

Mustard seed values are nominal, with none offering, and none of consequence likely to be on market during the balance of the season. Flax seed is not quotably lower here, but an easier tone is reported on account of reduced prices East. Alfalfa seed is offering at easy rates and is attracting very little attention. Values for bird seed continue at former range.

| | |
|----------------------------|-------------|
| Mustard, Yellow..... | 2 75 @ 3 00 |
| Mustard, Trieste Seed..... | 2 75 @ 3 00 |
| Mustard, Wild Brown..... | 2 00 @ 2 25 |
| Flax..... | 10 @ 12 |

| | |
|--------------------|---------------|
| Canary..... | 2 1/4 @ 2 3/4 |
| Rape..... | 2 1/4 @ 2 3/4 |
| Hemp..... | 2 1/4 @ 3 1/4 |
| Alfalfa, Utah..... | 5 1/4 @ 6 1/4 |

Bags and Bagging.

Inactivity is still the prominent feature of the Grain Bag market. On account of prospects of a light crop, there is not likely to be much done in bags until harvest time. Supplies are almost certain to prove more than required. The market has a weak tone. Wool Sacks are moving into the interior for the spring shearing season. There is no scarcity of offerings.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, buyer July..... | — @ — |
| Calcutta Grain bags, 22x36, spot..... | 5 1/4 @ 5 1/2 |
| State Prison bags, per 100..... | 5 30 @ — |
| Wool sacks, 4 lb..... | 30 @ — |
| Wool sacks, 3 1/2 lb..... | 27 @ — |
| Gunnies..... | 10 @ — |
| Bean bags..... | 4 1/4 @ 4 1/2 |
| Fruit sacks, cotton..... | 5 1/4 @ 6 1/4 |

Hides, Pelts and Tallow.

In conformity with lower markets for Hides in Eastern centers, quotations here have been reduced for both Wet Salted and Dry stock. Pelt market is a little easier, but is not materially lower. Tallow brought steady rates, with receipts and offerings of light proportions.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|------------|
| Heavy Steers, over 56 lbs..... | 10 @ 10 1/4 | 9 @ 9 1/4 |
| Medium Steers, 48 to 56 lbs..... | 9 1/4 @ — | 8 1/4 @ — |
| Light Steers, under 48 lbs..... | 9 @ — | 8 @ — |
| Heavy Cow Hides, over 50 lbs..... | 9 @ — | 8 @ — |
| Light Cow Hides, under 50 lbs..... | 9 @ — | 8 @ — |
| Wet Salted Kip..... | — @ 10 | — @ 9 |
| Wet Salted Veal..... | — @ 10 | — @ 9 |
| Wet Salted Calf..... | — @ 11 | — @ 10 |
| Dry Hides..... | 17 @ — | 13 1/2 @ — |
| Dry Kip and Veal, 11 to 16 lbs..... | — @ 15 | — @ 11 |
| Dry Calf, under 4 lbs..... | 18 @ 20 | 16 @ — |
| Horse Hides, large..... | 2 25 @ 2 75 | — @ — |
| Horse Hides, medium..... | 2 00 @ 2 25 | — @ — |
| Horse Hides, small..... | 25 @ 50 | — @ — |
| Colts' Hides..... | 25 @ 50 | — @ — |
| Pelts, long wool, per skin..... | 90 @ 1 15 | — @ — |
| Pelts, medium, per skin..... | 70 @ 90 | — @ — |
| Pelts, short wool, per skin..... | 40 @ 60 | — @ — |
| Pelts, shearing, per skin..... | 15 @ 30 | — @ — |
| Deer Skins, best summer..... | 25 @ 30 | — @ — |
| Deer Skins, good medium..... | — @ 20 | — @ — |
| Deer Skins, thin winter..... | — @ 10 | — @ — |
| Elk Hides..... | 10 @ 12 | — @ — |
| Tallow, good quality..... | 3 @ 3 1/2 | — @ — |
| Tallow, No. 2..... | 2 @ 2 1/4 | — @ — |
| Goat Skins, perfect..... | 30 @ 37 1/2 | — @ — |
| Goat Skins, damaged..... | 10 @ 20 | — @ — |
| Kid Skins..... | 5 @ 10 | — @ — |

Honey.

The firm tone last noted as prevailing in the market for Extracted honey continues to be experienced, with light stocks of all grades. The same condition is reported as existing in the East and in Europe. Comb honey is still in more than ample supply for current requirements, having to depend wholly on local custom.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 4 1/4 @ 5 |
| Extracted, Light Amber..... | 3 1/4 @ 4 1/4 |
| White Comb, 1-lb frames..... | 8 @ 9 1/2 |
| Amber Comb..... | 5 @ 6 |

Beeswax.

Stocks are light and market is firm at prevailing rates. Small lots are being peddled out at an advance on figures herewith named.

Fair to choice, 1/2 lb.....24 @ 27

Live Stock and Meats.

Beef brought fully as good figures as last quoted, with tendency to more firmness, es-

pecially for best qualities. Market for mutton ruled firm at last quoted advance, and no prospect of supplies proving excessive in the near future. Still higher figures are anticipated soon. Hogs arrived rather freely as compared with the demand, and market was easy in tone, but was not quotably lower.

| | |
|--------------------------------------|---------------|
| Beef, 1st quality, dressed, net lb. | 6 1/2 @ 7 |
| Beef, 2d quality, net lb. | 5 1/2 @ 6 |
| Beef, 3d quality, net lb. | 4 @ 5 |
| Mutton—wethers, 8 1/2 @ 9c; wethers. | 9 @ 9 1/2 |
| Hogs, hard grain fed, medium. | 4 1/2 @ 4 3/4 |
| Hogs, small. | 4 @ 4 1/2 |
| Hogs, large hard. | 4 1/2 @ 4 3/4 |
| Hogs, soft and feeders. | 3 1/2 @ 3 3/4 |
| Hogs, country dressed. | 5 @ 5 1/2 |
| Veal, small, lb. | 6 @ 7 1/2 |
| Veal, large, lb. | 6 1/2 @ 7 |
| Lamb, Yearling, lb. | 9 @ 9 1/2 |
| Lamb, Spring, lb. | 10 @ 12 1/2 |

Poultry.

Market was less favorable to sellers than for several weeks preceding, owing to free arrivals of Eastern, four carloads of the latter coming forward since last review. While the weakness was mainly on old poultry, young stock did not sell so good advantage as for a fortnight or more preceding. Large and medium-sized broilers received the most attention. Turkeys were in poor request at low figures, owing to the breeding season being now on.

| | |
|--------------------------------|-------------|
| Turkeys, dressed, lb. | 12 @ 14 |
| Turkeys, live hens, lb. | 10 @ 11 |
| Turkeys, live gobblers. | 9 @ 10 |
| Hens, Cal., doz. | 3 50 @ 4 00 |
| Roosters, old. | 3 50 @ 4 00 |
| Roosters, young, (full-grown). | 6 50 @ 7 50 |
| Fryers. | 6 00 @ 6 50 |
| Broilers, large. | 5 00 @ 5 50 |
| Broilers, small. | 3 50 @ 4 50 |
| Ducks, young, doz. | 6 50 @ 8 00 |
| Ducks, old. | 4 00 @ 5 00 |
| Geese, pair. | 15 @ 16 75 |
| Goslings, pair. | 2 25 @ 2 75 |
| Pigeons, Old, doz. | 1 25 @ 1 50 |
| Pigeons Young. | 1 75 @ 2 00 |

Butter.

The market is showing more steadiness, and it looks as though prices had touched hedrock. There is certainly little prospect of values for desirable qualities dropping this season materially under current levels. A good shipping demand has been relieving the market of most of the surplus. There are also orders on the market to pack on local account. Very little of the butter now coming forward is especially desirable for packing.

| | |
|---------------------------------|-------------|
| Creamery extras, lb. | 18 @ 19 |
| Creamery firsts. | 17 @ 17 1/2 |
| Creamery seconds. | 16 @ 16 1/2 |
| Dairy select. | 16 @ 16 1/2 |
| Dairy seconds. | 14 @ 15 |
| Dairy, soft and weedy. | 14 @ 15 |
| Mixed store. | 14 @ 15 |
| Creamery in tubs. | 17 @ 18 |
| Picked roll. | 17 @ 18 |
| Dairy in tubs. | 17 @ 18 |
| Firkin, Cal., choice to select. | 17 @ 18 |
| Firkin, common to fair. | 15 @ 16 |

Cheese.

Prices are being sustained at practically the same range as last quoted. There has been an exceedingly good demand lately, stimulated to a great extent by the easy figures ruling. Any change in values in the near future is likely to be in favor of the producer.

| | |
|-------------------------------|-----------|
| California fancy flat, new. | 9 @ 9 1/2 |
| California, good to choice. | 8 1/2 @ 9 |
| California, fair to good. | 7 1/2 @ 8 |
| California Cheddar. | 9 @ 10 |
| California, "Young Americas". | 9 @ 10 |

Eggs.

No great changes have occurred in the egg market during the current week, but there has been a little better tone. Prices have averaged fractionally higher, and indications are that choice to select qualities, strictly fresh, will rule more in sellers' favor in the near future. Although arrivals are liberal, the demand at current rates is equal to the supply. The surplus eggs are either going into cold storage or are being limed for hakers.

| | |
|---|-----------------|
| California, select, large white and fresh. | 12 1/2 @ 13 |
| California, select, irregular color & size. | 11 1/2 @ 12 1/2 |
| California, good to choice store. | 11 @ 11 1/2 |
| California, common to fair store. | 10 @ 11 |
| Oregon, prime. | 10 @ 11 |
| Held Eastern, as to section and grading. | 10 @ 11 |
| Local Cold storage eggs. | 10 @ 11 |

Vegetables.

Spring vegetables are beginning to come forward freely, notably asparagus, peas, rhubarb and mushrooms. Values for these descriptions have been steadily tending in favor of the consumer. Mushrooms fared badly, in some instances failing to bring enough to pay for trouble of forwarding. Onion market ruled quiet and lacked firmness. Some Australian onions are now here seeking a market, but at higher figures than are obtainable.

| | |
|---------------------------------|-------------|
| Asparagus, No. 1, lb. | 5 @ 7 |
| Asparagus, common to fair, lb. | 3 @ 4 |
| Beans, String, lb. | — @ — |
| Beans, Lima, lb. | — @ — |
| Beans, Refuge, lb. | — @ — |
| Beans, Wax, lb. | — @ — |
| Cabbage, choice garden, 100. | 70 @ 80 |
| Cauliflower, doz. | 60 @ 70 |
| Corn, Green, sack. | — @ — |
| Corn, Alameda, crate. | — @ — |
| Cucumbers, hot house, doz. | 50 @ 1 00 |
| Egg Plant, lb. | — @ — |
| Garlic, lb. | 3 @ 4 |
| Mushrooms, Butternut, lb. | 10 @ 12 1/2 |
| Mushrooms, Wild, lb. | 10 @ 12 1/2 |
| Okra, Dried, lb. | 12 1/2 @ 15 |
| Onions, Yellow, good to choice. | 2 00 @ 2 50 |
| Onions, Yellow, cut. | 1 50 @ 1 75 |
| Peas, Sweet, Garden, lb. | 3 @ 3 1/2 |
| Peppers, Green Chile, lb. | — @ — |
| Rhubarb, box. | — @ — |
| Squash, Summer, lb. | — @ — |
| Tomatoes, box or crate. | 1 00 @ 1 50 |

Potatoes.

Values for potatoes have ruled steady, especially for best table qualities, with demand of much the same liberal proportions as during preceding week. Inquiry for seed potatoes was not active, but they were held at same prices as before. A few new potatoes are arriving, and in a small way bring good figures. Sweet potatoes are plentiful, neither was the demand for them very brisk.

| | |
|----------------------------|---------|
| Early Rose, River, cental. | 60 @ 70 |
| Peerless, River. | — @ — |

| | |
|--------------------------------------|-----------|
| Reds River. | 50 @ 60 |
| Garnet Chile, Mission. | — @ — |
| Burbanks, Salinas. | 75 @ 1 15 |
| Burbanks, River, sack. | 55 @ 65 |
| Burbanks, Petaluma and Tomales, cti. | 50 @ 60 |
| Burbanks, Humboldt, cti. | 50 @ 65 |
| Burbanks, Oregon, cental. | 55 @ 90 |
| Garnet Chile, Oregon. | — @ — |
| New Potatoes, lb. | 3 @ 3 1/2 |
| Sweet River, cental. | — @ — |
| Sweet Merced. | 75 @ 1 00 |

The Fruit Market.

Fresh Fruits.

The apple market was fairly stocked for this time of year, values remaining close to the range last quoted, with no particular firmness observable for other than most select. The demand was not active for common to medium qualities, while offerings were mostly of this class, as would naturally be expected at this late date. Very fancy fruit, four tiers to the box and without sign of blemish, was salable in a small way at an advance on quotations. It is not probable that materially higher prices than are now current will be experienced during the balance of the season. There are no evidences of any large quantities remaining in the interior, although receipts are of liberal volume for March. Over 1000 boxes arrived per one steamer from Humboldt this week. There is no other deciduous fruit on the market, neither are there berries of any sort offering at present.

| | |
|----------------------------------|-----------|
| Apples, fancy, 4-tier, box. | 1 25 @ — |
| Apples, choice, 4-tier, box. | 75 @ 1 00 |
| Apples, fair to good, 50-lb box. | 70 @ 75 |
| Apples, common to fair, box. | 40 @ 60 |

Dried Fruits.

The market for cured and evaporated fruits is showing little life, although there are still liberal quantities unplaced, especially of Prunes, remaining stocks of which are estimated at 12,000,000 pounds in this State. Other varieties are estimated as follows: Peaches 3,000,000 lbs., apricots 1,000,000 lbs., various 1,000,000 lbs. In connection with about 10,000,000 lbs. Raisins, there is an aggregate of 25,000,000 to 30,000,000 lbs. evaporated and dried California fruit yet to be marketed, being fully 1000 carloads. Shipments will have to average ten carloads per day during the balance of the season to absorb above quantity. A small percentage of this fruit will go outward by sea. The last steamer for Victoria, B. C., took 62,300 lbs. assorted. Shipments to the North, however, do not include any Prunes or any stone fruit unpitted. Apples, Pitted Plums and choice halved Pears are in light stock, with values steady. The same remark applies to Nectarines and Figs, but the latter two are not as readily salable as the first three varieties above named. Demand for Prunes is almost wholly for small, or, to speak more correctly, for the lowest priced ones. Medium-sized will not command much, if any, more at present on Eastern account than small Prunes. Apricots now in blossom are reported to have been damaged by frost, but the market for the dried product has thus far shown no improvement in consequence. Peaches are moving very slowly, with quotable values for the same a little lower than last noted.

EVAPORATED OR BLEACHED.

| | |
|--|---------------|
| Apricots, Royal, in sacks, per lb. | 4 1/2 @ 5 |
| Apricots, Royal, fancy. | 6 @ — |
| Apricots, Moorpark. | 7 @ 9 |
| Apples, in boxes. | 6 1/2 @ 7 |
| Figs, fancy pressed. | 8 @ 10 |
| Nectarines, White. | 4 1/2 @ 5 |
| Nectarines, Red. | 4 1/2 @ 5 |
| Peaches, unpeeled, choice. | 3 1/2 @ 4 |
| Peaches, unpeeled, fancy. | 5 @ 5 1/2 |
| Peaches, peeled, in boxes. | 9 @ 12 |
| Pears, unpeeled Bartlett's, halved, fancy. | 7 @ — |
| Pears, halved, unpeeled Bartlett's. | 4 1/2 @ 6 |
| Pears, quartered, unpeeled Bartlett's. | 4 @ 5 |
| Pears, peeled and sliced. | — @ — |
| Plums, pitted. | 4 1/2 @ 5 1/2 |
| Prunes, in sacks, 40-50's. | 4 1/2 @ 5 |
| 50-60's. | 3 @ 3 1/2 |
| 60-70's. | 2 1/2 @ 2 3/4 |
| 70-80's. | 2 1/2 @ 2 3/4 |
| 80-90's. | 2 @ 2 1/2 |
| 90-100's. | 1 1/2 @ 2 |

Above figures are on basis of 2 1/2 @ 2 3/4 c for 4 sizes. Prunes in boxes, 1/2 c higher for 25-lb boxes, 1/2 c higher for 50-lb boxes.

| | |
|-----------------------------------|-----------|
| 4 sizes Santa Claras and equal. | 2 1/2 @ — |
| 4 sizes San Joaquin and Northern. | 2 1/2 @ — |
| Prunes, Silver. | 5 @ 8 |

COMMON SUN-DRIED.

| | |
|---------------------|-----------|
| Apricots, ordinary. | 4 @ 5 |
| Apples, sliced. | 3 1/2 @ 4 |
| Apples, quartered. | 3 1/2 @ 4 |
| Figs, Black. | 2 @ 4 |
| Figs, White. | 3 @ 4 |
| Peaches, unpeeled. | 3 @ 4 |
| Plums, unpitted. | 1 @ 1 1/2 |

The dried fruit market in the East is thus outlined by a New York review of recent date coming through by mail:

Evaporated apples have continued in active demand this week and market is firm; choice to fancy job moderately in range of 8 1/2 @ 10c, latter very extreme, with prime selling fairly at 8 1/2 @ 8c, and grades just under prime, say from 7 @ 8c, especially active. Sun-dried rather quiet but held with more or less confidence, especially desirable grades of southern sliced. Chops quiet but steady with not enough business at 4c to establish it as a quotation. Cores and skins rather easy and 2 1/2 c full high for best offerings. Cherries are in full hands and well under control and generally held at much higher figures than quoted, though demand moderate. Raspberries weak and offered freely with outside quotations extreme. Other small fruits not plenty and held steadily. California fruit has met an active demand, especially the cheaper grades, though prices show no change.

| | |
|--|-----------|
| Apricots, Cal. Moorpark, 1897, per lb. | 8 @ 11 |
| Apricots, Cal. Royal, 1897, per lb. | 5 1/2 @ 8 |
| Peaches, Cal., 1897, peeled, per lb. | 10 @ 16 |
| Peaches, Cal., 1897, unpeeled, per lb. | 5 @ 9 |
| Pears, Cal., 1897, per lb. | 5 @ 10 |
| Prunes, Cal., 1897, per lb. | 3 @ 8 |

Raisins.

There have been no new developments in the market for Raisins since last review. The movement is slow and prices continue at a low range. Market is especially weak for rain-damaged goods, with a large percentage of offerings of this description. Quotable values remain about as last stated.

F. O. B. FRESNO DELIVERY.

| | |
|-----------------------------|-------|
| Imperial Clusters, per box. | — @ — |
|-----------------------------|-------|

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| | |
|----------------------------------|---------------|
| Dehesa Clusters, per box. | — @ — |
| Fancy Clusters, per box. | — @ — |
| Boxes, London layers, 20-lb box. | 1 00 @ 1 10 |
| (Usual advance for fractions.) | |
| Loose Muscatel, 4-crown, lb. | 3 1/2 @ — |
| Loose Muscatel, 3-crown. | 2 1/2 @ 3 |
| Loose Muscatel, 2-crown. | 1 1/2 @ 1 1/2 |
| Sultanas. | 3 1/2 @ 3 1/2 |
| Seedless Muscatel. | 1 1/2 @ 2 |
| Dried Grapes. | 1 @ 1 1/2 |

Citrus Fruits.

Oranges were in fair receipt, and with the weather hardly so favorable as preceding week, prices were at a little lower range. Market was especially weak for Seedlings and common qualities of Navel. There are some very choice Navels offering, and there are no evidences of any frosted oranges being now on market. Lemons were in fair supply, and market was quotably lower than at date of last review, demand being slow. Limes were not in heavy stock, but were mostly green, which operated against their advantageous sale.

| | |
|---------------------------|-------------|
| Oranges—Navel, box. | 1 25 @ 2 75 |
| St. Michaels. | 1 50 @ 2 00 |
| Seedlings. | 75 @ 1 25 |
| Lemons—Cal., select, box. | 1 75 @ 2 00 |
| Cal., good to choice. | 1 00 @ 1 50 |
| Cal., common to good. | 50 @ 1 00 |
| Limes—Mexican, box. | 5 00 @ 5 50 |
| Cal., small box. | 75 @ 1 25 |

Nuts.

Almond market is very firm, owing to reports of damage by frost to the fruit now in blossom. Spot supplies are small. Walnuts are not offering in large quantity, but demand for them at full current rates is light. Peanuts are in moderate supply and are selling at steady figures.

| | |
|----------------------------------|---------------|
| California Almonds, paper shell. | 8 @ 9 |
| California Almonds, soft shell. | 6 @ 8 |
| California Almonds, hard shell. | 4 @ 4 1/2 |
| Walnuts White, paper shell. | 7 @ 8 |
| Walnuts White, soft shell. | 7 @ 8 |
| Walnuts White, Cal., standard. | 4 1/2 @ 5 1/2 |
| Chestnuts, Cal. Italian. | 8 @ 9 |
| Peanuts, Cal., fair to prime. | 4 @ 4 1/2 |
| Peanuts, Eastern hand-picked. | 5 @ 6 |
| Pine Nuts. | 7 @ 8 |

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|-----------------|--------------------|----------------------|
| Flour, 1/2-sks. | 124,366 | 3,613,892 |
| Wheat, cts. | 130,482 | 8,726,440 |
| Barley, cts. | 62,610 | 4,112,461 |
| Oats, cts. | 9,470 | 513,904 |
| Corn, cts. | 3,590 | 246,308 |
| Rye, cts. | 550 | 30,693 |
| Beans, sks. | 3,071 | 409,860 |
| Potatoes, sks. | 10,597 | 856,324 |
| Onions, sks. | 1,738 | 87,911 |
| Hay, tons. | 1,828 | 98,766 |
| Wool, bales. | 96 | 49,564 |
| Hops, bales. | 37 | 7,863 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|-----------------|--------------------|----------------------|
| Flour, 1/2-sks. | 37,628 | 2,300,112 |
| Wheat, cts. | 172,898 | 8,544,981 |
| Barley, cts. | 51,221 | 2,866,985 |
| Oats, cts. | — | 12,543 |
| Corn, cts. | 501 | 31,948 |
| Beans, sks. | 476 | 287,216 |
| Hay, bales. | 930 | 50,611 |
| Wool, lbs. | 13,391,776 | 11,000,240 |
| Hops, lbs. | 485 | 1,185,377 |
| Honey, cases. | 7 | 6,521 |
| Potatoes, pkgs. | 978 | 170,674 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, March 16.—California dried fruits, steady. Evaporated Apples, common, 5 @ 8c; lb.; prime wire tray, 8 1/2 @ 8 1/2c; wood dried prime, 8 1/2 @ 8 1/2c; choice, 8 1/2 @ 9c; fancy, 9 1/2 @ 10c. Prunes, 3 1/2 @ 3c per pound. Apricots, Royal, 5 1/2 @ 7c; Moorpark, 8 1/2 @ 10c. Peaches, unpeeled, 5 @ 9c; peeled, 12 @ 16c.

NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 108 Davis St., San Francisco, at 10 o'clock A. M. Wednesday, the 13th day of April, 1898.

CHARLES WOOD, I. C. STEELE,
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An experienced laborer desires a permanent job on his orchard where more than fifty Japanese can work during winter and more than one hundred during summer, under him, making over seventy on the average at any season of the year. He has been a foreman of many Japanese at various places, can furnish the hands and control them well, and speak English and make accounts for them. All of them have experience in orchard work. Please address M. H. Japanese M. E. Church, Vacaville, Solano Co., Cal.

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Mr. Nisson's Views on Direct Legislation.

At the last meeting of Two Rock Grange a communication was read from Tulare Grange in regard to the Two Rock Grange resolutions on direct legislation. What it is and in what way it can benefit our order, that, I believe, were the questions. The letter was referred to me as chairman of the original committee and duly handed to me on my arrival at the hall. Unfortunately I lost it, and so take this means of reaching Tulare Grange (not knowing the secretary's address or name) and hope my explanations, though brief, will be satisfactory, and possibly answer similar questions from other granges.

As its name implies, direct legislation means that the people make their laws themselves directly, and not through representatives as now; that is, laws of a certain importance. The initiative means that if a certain per cent of the voters desire a law enacted and a petition to that effect is sent to the legislature or house of representatives, (the government or legislatures may also propose laws), such laws after being properly put in shape are then submitted to the people for adoption or rejection. This is the referendum.

In Switzerland direct legislation has been in existence for over twenty years, and gives perfect satisfaction. It is said that corruptness in the Swiss legislature before then was fully as bad as with us now, but has, of course, disappeared since the legislature has been shorn of its arbitrary power. While direct legislation may be said to be of Swiss origin, we have really had it in our New England town meetings from the earliest days, in a small way, of course, but the idea is about the same.

There seems to be no good argument against direct legislation at all. The only one, somewhat persistently brought forward, that the people are not competent to make their own laws, is not a good argument, even if it were true. We are surely intelligent enough to manage our own affairs, but if we are not, why, then, we must simply mismanage until we learn to manage, and the sooner we begin the better.

"In what way will it benefit our order?" Our order was instituted to benefit "our country and mankind" and that includes our order. Whatever is of benefit to mankind is of benefit to our country, and what is of benefit to our country is of benefit to the agricultural class, and reverse, whatever benefits the agricultural class benefits our country, and our country cannot be truly and permanently prosperous and happy without the whole human race, in a direct or indirect way, being benefited by it. The agricultural class, however, feels most severely the effects of unjust laws, even if all classes must suffer with it sooner or later. So, from purely selfish motives, we should be the ones to work the hardest for reforms leading toward a better system of law making.

No country can be prosperous without just laws; but just and good laws are of slow growth. No one can for a moment expect the hundreds of laws passed so hurriedly by our legislatures at every session can all be good laws, even letting corruption out of the question, and the only reason no more harm follows this absurd mania for making laws is the fact that they are, most of them, dead soon after their creation.

Under direct legislation very few laws are passed, but these few are so well considered that a bad law stands no chance of being passed, scarcely of being initiated or introduced. So direct legislation is well worthy of being carefully studied by our order.

Let us keep it out of partisan politics. Rather, try to force each party to adopt a direct legislation plank. Neither of the leading parties will add any new planks to their platforms unless forced to by public opinion. No old party ever does; it is not policy from a partisan standpoint to do so. But especially will it be difficult to make them adopt a measure which shears them of so much of their political power and utterly destroys all this corruption, on which political bosses and other parasites now so successfully fatten. Therefore, if we speak at all we should speak with vigor, and in a reform of this kind we should lead, not follow.

Several granges have notified us of having endorsed our resolutions. From Roseville grange a very stirring endorsement is just received. We shall be glad to hear from all.

C. NISSON.

Petaluma, March 10th, '98.

Clara—Well, aunt, have your photographs come from Mr. Snappe-schotte's? Miss Maydeval (angrily)—Yes, and they went back, too, with a note expressing an opinion of his impudence. "Gracious! What was it?" "Why, on the back of every picture were these words: 'The original of this is carefully preserved.'"—Tit-Bits.

Complainant—Sure, my husband is drunk twenty-four hours the day, your honor. Judge—All right. Shall I give him six months? Complainant (hastily)—Oh, no, no, your honor; he's a good man when he ain't in his cups.—New York Journal.

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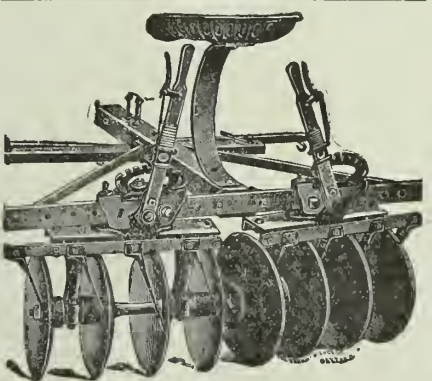
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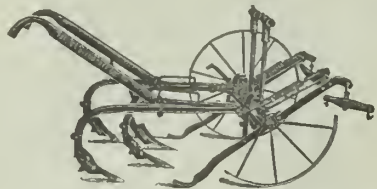
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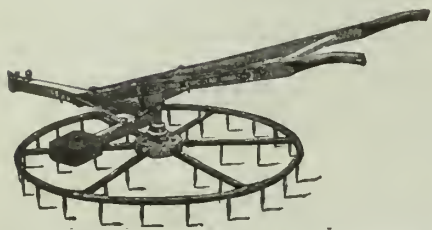
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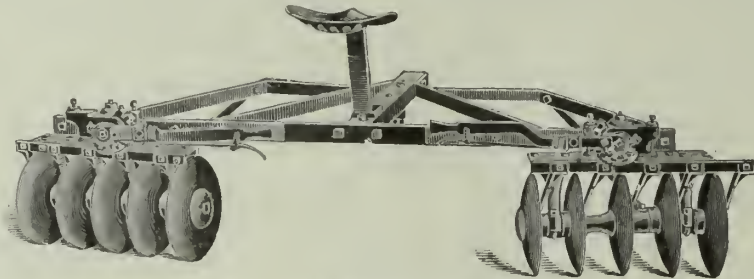
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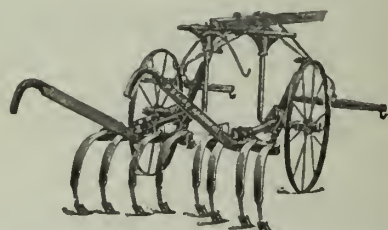
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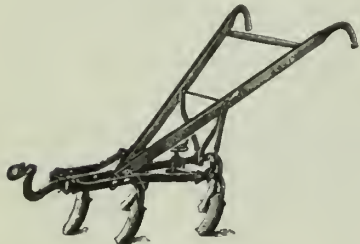
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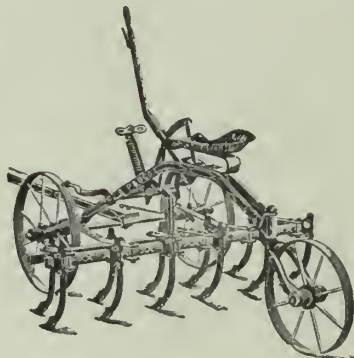
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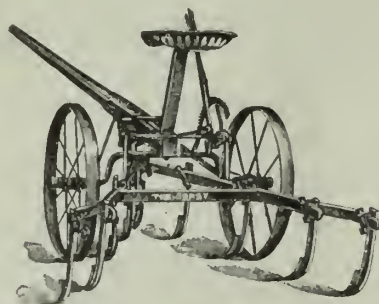
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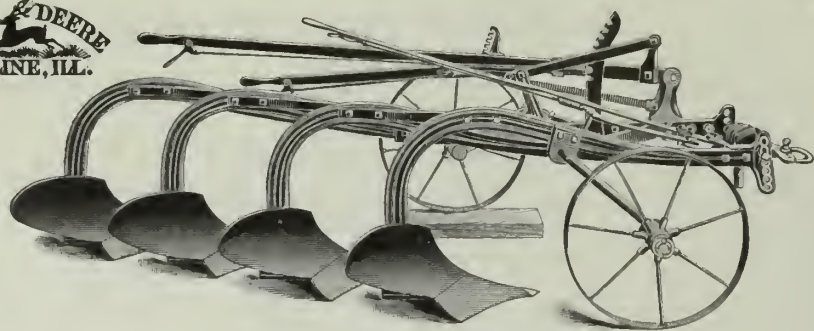
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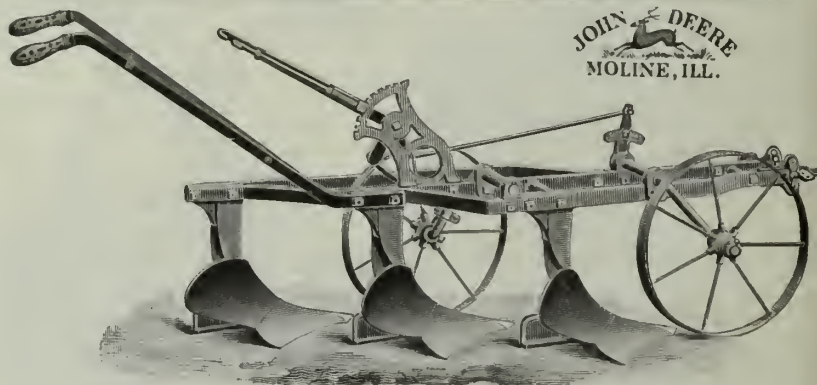
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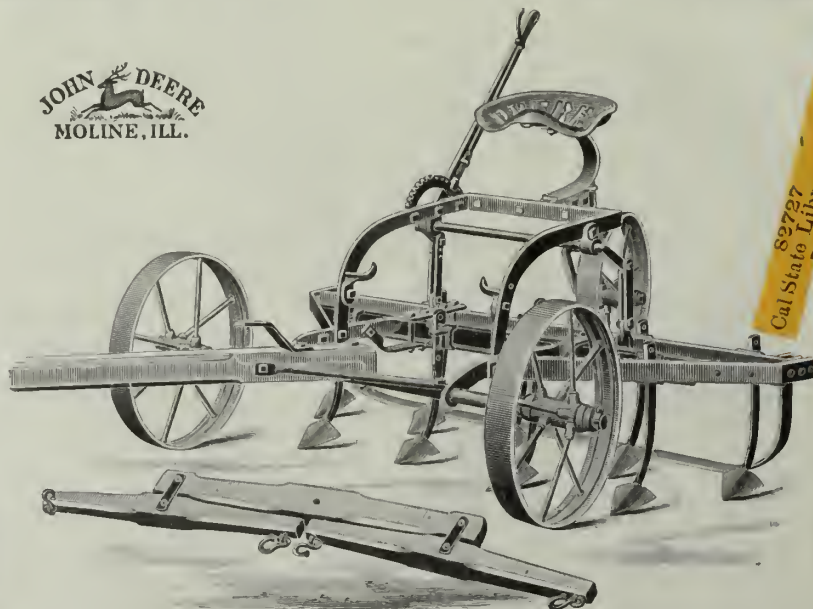


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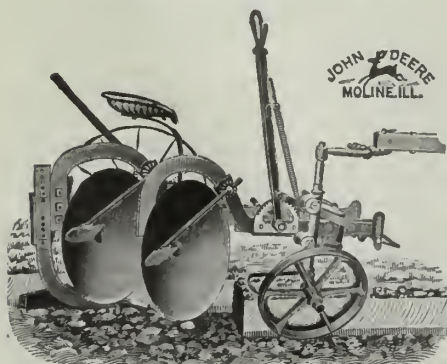
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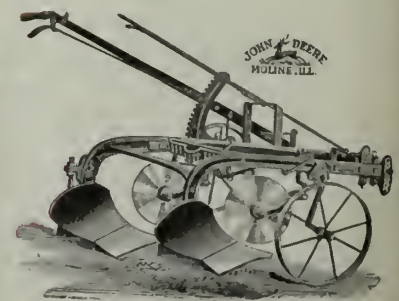
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THE PACIFIC RURAL PRESS

CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 13.

SAN FRANCISCO, SATURDAY, MARCH 26, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

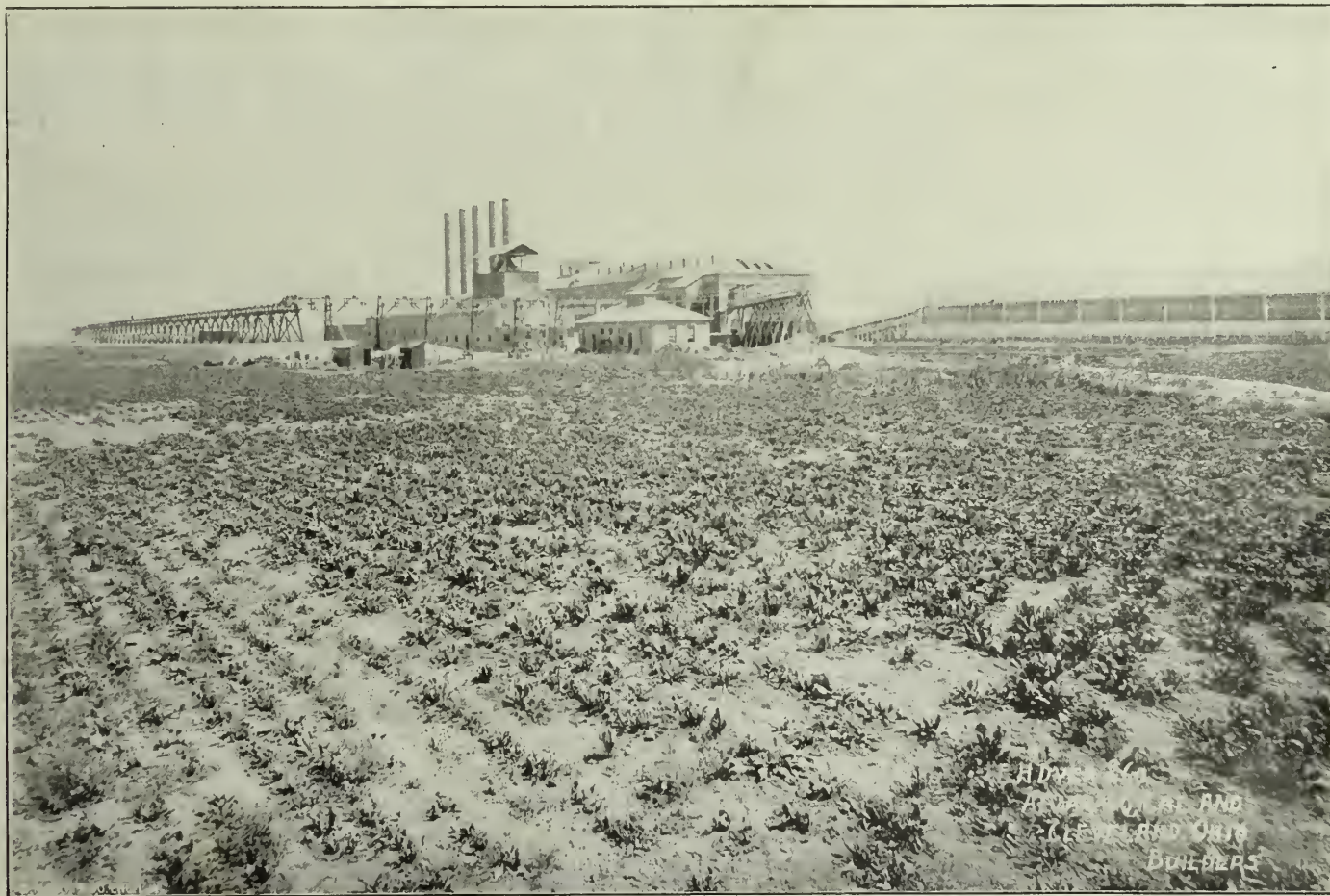
The Alamitos Sugar Factory.

The delightful climate of California ministers directly to the industrial advancement of the State. The truth of this proposition is manifested in the countless investments in homes, orchards, manufacturing and commercial enterprises which are made by the thousands who come here to escape the rigors of wintry climates. In this way, as well as in the choice productions which it favors, our climate becomes a distinct factor of our progress and prosperity. Now and then, too, there are instances of the same impelling force which are conspicuous by reason of the exceptional greatness of the resources which they bring under tribute to the progress of the State. Perhaps in this line few are so notable as that of the realization of the Alamitos sugar enterprise on the rich lands of Orange and Los Angeles counties, to which we refer briefly in connection with the engravings on this page.

W. H. Holabird of Los Angeles, who has been a champion of beet sugar development for some years past, has just issued a very handsome brochure entitled "American Beet Sugar," which gives instructions in beet growing from seed to harvest and full illustrations of a model beet sugar factory and explanatory notes. From Mr. Holabird's work we learn that in 1896 Mr. J. Ross Clark of Clark Bros., bankers and smelters of Butte, Montana, sought health in the genial climate of Los Angeles. Finding what he sought for, he cast about for lucrative investment of idle capital. The beet sugar industry was not at that time as prominently before the people as it is to-day, although the dividends had been large and regular by the three plants in California and one in Utah. In 1897 J. Ross Clark and his brother, Wm. A. Clark (a multi-millionaire), organized "The Los Alamitos Sugar Company," located the plant twenty miles from Los Angeles, Cal., gave E. H. Dyer & Co. a contract to erect a



WILLIAM A. CLARK.



LOS ALAMITOS SUGAR WORKS AS SEEN FROM THE NORTH.



J. ROSS CLARK.

350-ton plant and have it ready for the crop of the same year—'97. The mill was completed on time, perfect in every detail. The first campaign was a phenomenal success, and resulted in an enlargement of the factory to double its original capacity for the crop of 1898. The investment of the Clarks in the Los Alamitos plant was increased by the purchase of 8000 adjoining acres the following season, with the intention of erecting in '99 a second sugar refinery, making their total investment \$1,325,000.

The beet sugar factory at Alamitos and the men whose money brought it into existence are shown in the engravings on this page. The Dyers, who constructed and equipped the factory, are old friends of the RURAL who found in our columns opportunity for the declaration of their faith in beet sugar long before millionaires could be easily interested in such investments. Next to the budding towns near the

Salinas and Hueneme factories, now in course of construction, Los Alamitos, California, is the youngest town or community dependent upon a sugar factory. Ground was broken in the fall of '96. The situation was a great unsettled valley, the nearest railroad station seven miles away. The soil, virgin and of surprising fertility, had been of little use save to produce a coarse grass for pasture. One year passed, and a transformation took place that is most interesting to note. The Southern Pacific Company extended their line to the site now christened "Los Alamitos." A town of 500 people came into existence as if by magic. Water-works, hotels, stores, livery stables and comfortable homes were built in less than six months. Thirty-five hundred acres of land were broken up and put into beets, the area to be doubled in 1898, unless the dry season interferes.

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ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, March 26, 1898.

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The Week.

The Produce Markets.

The universal apprehension respecting the weather is being reflected in the local grain market. Wheat is from 50 cents to \$1 per ton higher; and having gotten beyond the normal price as related to the European price, the market stands "tied up" against the export trade. Barley, which is produced largely in the districts most affected by the drouth, is even more affected than wheat and is very strong at a heavy advance. Hay has advanced another dollar on the ton and the talk is of figures still higher.

Curiously enough there is nothing in the dried fruit market to indicate unusual conditions. The same dullness we have seen all through the winter continues and prices are just where they were at our last writing.

In the live stock market beef is firm at last week's price. Mutton is a little easier. Hogs are firm at a slight decline.

In wool nothing is doing and nobody has any idea of what spring prices will be. Hides are weak, though there is a good demand for choice calf.

The only notable incident of the week was the arrival of two small lots of strawberries, which sold for \$1.50 per basket containing less than a pound.

Weather and Crops.

Sharp frosts, producing most serious effects upon the forming fruits of deciduous trees, are still reported, and the present belief is that great losses have occurred over wide areas of orchard country. The reports are too authentic and circumstantial to admit much hope that they are far overdrawn. It is true that when the stroke falls soon after the blooming there are often belated buds which advance into fruiting, but there are many important producing valleys where the injury comes too late to realize much in that direction. The report of the Weather Bureau, which we print in detail in another column, may be in some particulars characterized by the darkness which betokens the first impressions of observers, but there is little reason to hope for any truth in the opinion of the New York Journal of Commerce as telegraphed on Tuesday, as follows:

So far the freeze in California does not seem to have affected the market for green fruit, because of the fact that it will be some time yet before shipments of the '98 crop can be made. It is expected, however, that apricots, cherries and peaches will be sent forward in much smaller quantities than usual at the beginning of the season, but as yet there is nothing definite upon which to base such conclusions, outside of reports of frosts, which many consider biased. "The cry of wolf," said one bandler of California fruits, "has been

so often raised that no one is disposed to take it in earnest." We wish this view were true. There is, however, too much wolf in the case this time. Since the reports were sent to the Weather Bureau the following press dispatches have been received, under date of March 22:

Stockton: All the almonds and apricots have been ruined while other varieties have not escaped without some damage. San Jose: No fruit seems to have been affected by recent frosts excepting apricots, and the damage to them has been slight, and only in low localities. Moderate showers during the next three weeks will insure good average crops. Sacramento: There is no doubt that all crops, fruit, grain and vegetables have suffered severely this past week from frost and north winds.

Fresno: The bulk of the apricot, nectarine and almond crops has been destroyed, while peaches of some varieties are badly damaged, and others are but little hurt. Pears, apples and prunes seem to be hurt but little.

Visalia: Last night's freeze has resulted in the almost total loss of the fruit crop. The thermometer fell to 18°. Fruit growers are discharging their hands and the fruit industry has received a blow from which it will take several years to recover.

The interior valley points seem to have suffered worst.

The following data for the week ending 5 A. M., Wednesday, Mar. 23, 1898, are from official sources. and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week... | Total Seasonal Rainfall to Date... | Total Seasonal Rainfall Last Year to Same Date... | Average Seasonal Rainfall to Date... | Minimum Temperature for the Week... | Maximum Temperature for the Week... |
|----------------------|--------------------------------|------------------------------------|---|--------------------------------------|-------------------------------------|-------------------------------------|
| Eureka..... | .18 | 28.23 | 43.09 | 36.53 | 30 | 52 |
| Red Bluff..... | .00 | 12.08 | 22.71 | 21.17 | 30 | 80 |
| Sacramento..... | .00 | 8.55 | 15.81 | 16.69 | 30 | 62 |
| San Francisco..... | .03 | 7.52 | 20.66 | 19.62 | 40 | 59 |
| Fresno..... | .01 | 3.71 | 9.97 | 8.16 | 30 | 64 |
| San Luis Obispo..... | .08 | 5.45 | 20.11 | .... | 28 | 64 |
| Los Angeles..... | .22 | 5.02 | 16.46 | 14.62 | 36 | 64 |
| San Diego..... | .16 | 3.82 | 11.60 | 9.12 | 40 | 60 |
| Yuma..... | .00 | 1.65 | 5.35 | 2.87 | 38 | 72 |

Freight Rates on Fruit.

Referring again to the subject of securing reduced rates on fruit shipments East, as mentioned by Mr. Kruckeberg in last week's RURAL, it may be added that the consensus of opinion of the meeting was to make a strong effort to secure the much-wished-for reduction, and a committee comprising Mr. Packard of Pomona as chairman, A. P. Griffith of Azusa, E. F. C. Klacke of Los Angeles, Angeles, A. P. Ruggles of Redlands, R. H. Young of San Diego, N. W. Blanchard of Santa Paula and A. P. Johnson of Riverside was given discretionary powers to confer with the transportation companies in behalf of the orange growers. The committee has had a conference with the railway officials, and hopes, in a measure at least, to secure a reduction in the present rate on oranges and lemons.

Answers by Dr. Creeley.

Horse with Megrim.

TO THE EDITOR:—A horse eight years old when working in the field rears suddenly, falls down flat and limber, but gets up again in a minute and goes on as if nothing had happened.

This occurs at irregular times, sometimes not for months, and has never happened on the road, not even when hauling heavy loads. During the attack the respiration remains perfectly normal. A sudden, though not excessive, perspiration and a dull look of the eyes are the only symptoms.

Aptos.

E. C. W. M.

This is a condition known as megrims, vertigo or giddiness, and is due to an obstructed circulation, as pressure on the jugular vein from the collar. Treatment is to remove the pressure from the neck, use cold effusions, laxative diet, cool stable, and give two grains of arsenic daily in the feed.

Indurated Mammary Gland.

TO THE EDITOR:—I have a Jersey cow whose general health appears good, but something is the matter with her udder. Before calving her udder became very large and hard. I also noticed a twitching and lifting of the hind leg while standing. After the calf was born the lifting of leg continued, also the twitching. The udder became hard about half way up from the teats. It has been three weeks since she calved. The calf is still nursing one-half of the milk. This same cow at previous calving gave a large rich flow of milk. This milking is only about one-half and cream very thin. The cow is staked on good green feed.

West Side.

GEO. W. STEELE.

This is an indurated mammary gland and is due to a previous inflammation from caked milk or a bruise. Insert a milk tube two times daily and inject in a tablespoonful of Marchand's peroxide of hydrogen. Apply externally once daily tinct. of iodide and give internally per feed or water the following: Iodide potash, 2 ozs.; nitrate potash, 4 ozs.; citrate of iron, 1 oz. Mix and divide into twelve powders; give one daily.

For a Pet Dog.

TO THE EDITOR:—I have a pet dog (an English pug) who is troubled with a skin disease, his back cracking open and bleeding; it has also gone to his head and hind legs. We have tried almost everything, but without avail.

Saratoga.

SUBSCRIBER.

Apply sulpho-iodide ointment for one week, after which use: Creoline, one ounce; whale oil, four ounces; oil of eucalyptus, two drachms; mix and apply once daily after washing. Feed no meat or heating food, and give four drops daily internally of Fowler's solution of arsenic.

Weather and Crops.

SUMMARY OF THE REPORT OF THE U. S. WEATHER SERVICE FOR THE WEEK ENDING MARCH 21, 1898.

The week has been very unfavorable for vegetation, being both cold and dry. At the end of February the prospects of a bountiful yield, in the northern portion of the State particularly, were very bright. The past week has been marked by injurious frosts and low temperatures. Throughout the State the temperature has averaged about 7° below the normal. The rainfall was again deficient and in the great valleys, especially the Sacramento, only light showers fell, and these were of little value to growing crops. The heavy frosts occurring night after night have done great damage to deciduous fruit, which was well advanced. Apricots, almonds and early peaches have been badly damaged; citrus fruits are reported in some places as probably uninjured, having been protected by smudging. The full extent of the damage cannot yet be determined. Heavy north winds have also had a bad effect upon vegetation. Early-sown grain suffered less than late-sown. Small fruits have suffered and strawberries are reported as injured in some localities. Vegetables also have felt the effects of the cold, dry conditions. Pasturage is poor in many of the southern coast counties and cattle are being moved to other sections where grazing can be had.

General Summary.

SHASTA.—Severe frosts killed nearly all almonds, apricots, early peaches and Tragedy prunes.

TEHAMA.—Heavy northerly winds have been hard on everything. Not enough rain to start the small creeks; such a condition, it is said, was never known here before.

BUTTE.—Frosts have probably killed almonds, peaches and apricots; pears and prunes do not seem to be touched. Citrus fruits were protected by smudging and do not seem to be much damaged. Bottom lands suffered most; on high lands damage has been slight. Rain is needed to cultivate orchards. Cold weather holds back orange bloom.

YUBA.—Although grain is not suffering, rain would be beneficial. Plowing. Peaches and apricots slightly damaged by frost. Smudging will probably save almonds.

GLENN.—Heavy frosts. Grain looks well, but is badly in need of rain. Most farmers still plowing.

YOLO.—Apricots and almonds badly frozen. Prunes blooming very thin, probably hurt by frost. Outlook very discouraging for deciduous fruit.

SOLANO.—All apricots on low, flat lands killed. Late varieties of peaches badly injured, almost entirely killed. Prunes, plums, pears and few early peaches not injured much, as buds were not fully open. The worse freeze than ever here before. Grain suffering for rain.

SAN JOAQUIN.—Severe frosts have damaged apricots, peaches and almonds. Showers freshened the grain. Planting beets. Some fruit orchards show total loss; few, if any, escaped injury.

MERCED.—Heavy frosts killed almonds, apricots, prunes and early peaches. Light showers kept grass growing slowly. No prospect for hay crop.

STANISLAUS.—Frost. No rain. Crops looking badly. Fruit badly burned.

KERN.—Frost killed all almonds and apricots, damaged early plums, peaches and French prunes. Grass on dry land still doing well.

FRESNO.—Heavy frosts have done great damage to pears, apricots and nectarines. Cattle and sheep suffering from cold and scarcity of range feed. Shearing will begin soon.

KINGS.—Much damage to fruit crop.

TULARE.—Frosts injured apricots and peaches. Prospects for grain discouraging.

SONOMA.—Warm weather early part of week brought out fruit buds, and the three frosts following have thinned the peaches badly; prunes on high lands are safe. Orchardists say that peach, apricot and almond crops are practically ruined.

NAPA.—Apricots and almonds badly damaged; early peaches and cherries slightly. Hay and grain looking well. Rain would do good. Heavy north winds. Ground too dry for plowing.

SAN MATEO.—Killing frosts and cold north winds. Rain needed. Fruit growers smudging. Strawberries damaged.

CONTRA COSTA.—Much damage by frost to growing grain and fruit.

SANTA CLARA.—Rain is much needed. Growing grass and grain doing well. Dry north winds; continued heavy frosts damaged apricots, peaches and prunes on lowlands; on highlands where soil is not as light and lighter very little damage. Early potatoes and strawberries killed. Very little smudging.

SANTA CRUZ.—Good rain helped the crops. Outlook good.

SAN BENITO.—Rain enough to keep grain alive, but it is not growing much. Apricots all killed and peaches badly injured.

MONTREY.—Good prospect for hay crop if showers come soon.

SAN LUIS OBISPO.—Frosts killed flowers and tender plants. Late, light showers were of great benefit to early sown grain, but late sown was damaged by heavy winds.

SANTA BARBARA.—Continued dry weather. No rain. Heavy north winds.

LOS ANGELES.—(Bassett)—Good rain made grain look better. (Duarte)—Heavy rain Thursday. Orange growers irrigating. (Los Angeles)—Rain helped all crops; fruit trees of all kinds looking well. (Palmdale)—Rain very much improved hay and grain. Frosts injured early almonds and apricots. (Pomona)—Some damage to peaches and apricots by frost. (San Fernando)—Frost damaged early peaches and apricots. Grain looking well but needs rain.

VENTURA.—Windy, disagreeable week, with occasional showers. Cattle being moved into other counties for grazing. Much damage to deciduous fruit blossoms; oranges not hurt.

ORANOE.—Cloudy with west winds. Light frost but no damage.

SAN BERNARDINO.—Light rain during week. Grain fields and orchards looking better.

RIVERSIDE.—No particular damage done deciduous fruits. Orange shipments fair.

EUREKA SUMMARY.—Heavy frosts and cold northwesterly winds retarded premature budding; no material damage to fruit trees; grass abundant; yield dairy products above average.

LOS ANGELES SUMMARY.—Some reports say frost killed flowers and tender vegetation; some say deciduous fruits injured; others, little if any damage. Frosts, light to heavy, generally reported.

Poison for Cutworms.

TO THE EDITOR:—Will you kindly inform me through the columns of your paper what to do for cutworms. They eat the leaves and buds by night and go down in the ground in the daytime.

J. K.

Saratoga.

Recently most success with cutworms has been attained with the use of a poison like that used for grasshoppers, as follows: Take thirty pounds bran, two pints molasses, one pound Paris green; put the molasses into six quarts of hot water; add the bran and Paris green, mixing thoroughly until the water is tinged with green. Place a spoonful of this on the ground near the trunk of the tree or vine. If a new lot of worms hatch, the dose will have to be repeated. The worms will leave the plants for the mixture every time. The bran and molasses tempts them and the Paris green does the killing. Of course poultry and other desirable live stock must be closely confined during the use of this poison.

AGRICULTURAL REVIEW.

CALIFORNIA.

Alameda.

A REMARKABLE POOL.—The dairymen of Alameda have formed a syndicate and taken steps to pool their interests in the matter of pasturing their cows and marketing their milk. Members of the organization have secured an option on 500 acres of pasture land near Pleasanton, where every cow owned by an Alameda dairymen will be sent in the near future. The scheme seems to have been perfected along broad lines, and if brought to a successful conclusion will prove an important undertaking. The dairymen have been complaining of the disadvantages they encountered in and about Alameda, to say nothing of the cost of handling them, which has reduced their profits greatly. In consequence they resolved to pool issues and secure one vast tract of land where all the cows will be kept under one management, and at a vastly reduced expense to the dairymen. There is to be a common milk station from which the consignments of each dairymen will be shipped daily to Oakland, for a later distribution to Alameda and vicinity. Smith and Bridges, who will remain in Pleasanton for a day or two, state that the establishment of the syndicate ranch will mean a boom to Pleasanton. They will bring an immense drove of cows with them and are armed with the authority of the Alameda dairymen to sign a lease for at least 500 acres of land. More will be acquired later if that is found necessary. Several tracts have been taken into consideration, but nothing definite has been decided upon as yet.—Livermore Herald.

Butte.

MR. NORMAN T. KIRK told a reporter last week that his father's death will in no wise affect the hemp industry on the Kirk ranch in Butte county.

SOME BIG GRAIN FIELDS.—Below is a statement of the acreage for Dayton township, with the names of the owners of the several crops: C. J. Burdick, 2200 acres; Harris & McRae, 4000; Joe Branss, 400; Val. Bateman, 300; J. Moak, 150; Fred Waterfield, 100; James Hegan, 600; I. Compton, 800; W. A. Yokum, 1200; Mrs. L. J. McEnespy, 150; T. V. Fimple, 150; A. Wahl, 320; P. Jones, 125; L. D. Fimple, 140; R. H. Fimple, 200; Nelson Bros., 3000; S. A. Hennigan, 680; A. Criley, 600; Mrs. J. Sutliff, 120; John Colm, 500; H. Padan, 900; W. W. Durham, 200; W. Thomas, 1240; L. Shirley, 900; J. Michael, 200; Joe Boucher, 680; John Hewitt, 800; K. B. Troxel, 400; T. I. Troxel, 80; A. T. Coon, 60; E. Coon, 140; A. Lawson, 700; John Crouch, 1500; J. Eddy, 380; J. G. Wannop, 120; Miller Bros., 600; Coon Bros., 120; Malvin Gray, 620; Dan Gray, 300; Peter Hanson, 30; K. McKenzie, 400; Mrs. L. M. Hennigan, 680; Jas. Lowery, 100; Warren Stevens, 400; S. Salmond, 400; T. Patrick, 120; V. Eastman, 120; Wm. Chapman, 300; S. McIntosh, 700; P. Guinness, 400; J. Saverling, 300; W. A. Parker, 600.—Herald.

Colusa.

REMARKS ON IRRIGATION.—L. F. Moulton expects to put in a big pump just below the bridge. This was one of the most productive prune orchards in the State last year, and Mr. Moulton says it would have produced enough more to have paid for a pumping plant if he had only given it a good summer flooding. The entire orchard was under water several days during the winter. The orchard is on the best river land, and if there is any land in the Sacramento valley that will produce fully without irrigation this land will do it. These facts are stated to give emphasis to the great value of irrigation and to the absolute folly of trying to farm on ordinary land in ordinary seasons without having control of water enough to insure a crop. There was not another prune orchard in the State that brought in more money per acre than this one, and yet Mr. Moulton knows from absolute experiment that the output might have been increased by the cost of a great pumping plant. It would seem that there was less chance for an additional production than almost anywhere—but it would have paid there! There is not a farm in Central irrigation district that could not afford to pay its share of the cost of the works for water this one year! If the owner of less than a quarter section of the best river land could afford to pay for a 100-H. P. engine and the pumps and all the etceteras that go to make up a pumping plant, and throw it away every year—even where he can flood during winter, what could one on the dry plains afford to pay? When one considers that it is the big prunes, the big oranges and the big fruit of all kinds that brings the big money; and that it is not only in the fruit but it is so in every possible production, both in the vegetable and animal lines, and that these cannot be assured anywhere that the grower has not the absolute control of the water, no man can account for the fact that the people of the Sacramento valley have not taken control of that element when all they have to do is to reach out and take it. The cost is not worth the talking about. One had as well talk of the cost of summerfallow. If one went in debt for summerfallow and then did not plant or use it, he would soon be bankrupt, and it is so with the water. If one starts to get it and spends nearly all the money necessary to get it and then quits, the debt will hurt. There has never been so wet a season as that water would not pay on any farm in Colusa county, and when a drought or a partial drought comes it saves everything. How much would a pumping plant on a barge, such as the *Sun* has been advocating for so many years, be worth such a year as this? Such a plant would water Moulton's orchard in a day. It would give us the best land we have under contract with the Crockett company—in short it would bring prosperity to the entire river district. Such a year the benefit would be more appreciable, but it would pay for itself a hundred times over the very wettest season a man ever saw in this valley. All along we have but to reach out and get this water. The cost, in comparison to the value, is nothing like as much as the cost of a plowing of the land in comparison to the worth of the harvest. There is no estimating, in fact, the worth of a control of the one life-giving element. The control, in fact, is the difference between prosperity and poverty—between life and death.—Colusa Sun.

Fresno.

The Fresno Chamber of Commerce proposes to organize a fine exhibit of Fresno county products for exhibition in the East. The label on each jar in this exhibit will state the name of the fruit, by whom it was grown, etc. This will be an advantage to the fruit grower, as well as giving the outsider a chance to see what kind of fruit is raised in Fresno county.

TREE PLANTING.—The Fresno Republican quotes Mr. Geo. Roeding, the well known nurseryman, as follows: "While apricot trees were in great demand last year, this spring peaches are the favorite variety. The frosts last season injured the apricots and for this reason fruit growers are inclined to plant harder fruits. There is a great demand for Muir peach trees. Prunes are not being planted extensively. Many persons are planting pear trees upon their alkali tracts. The trees seem to be adapted to such soil. A larger number of nectarines are being planted this season than last. There is a good demand for olive trees from points in southern California. The Fancher Creek nursery has shipped 81,000 olive trees to points south of Tehachapi." Mr. Roeding stated that the demand for local planting is very slight. He has great faith in the San Joaquin valley as an olive growing region. "I am surprised that the people in the San Joaquin valley do

not plant more orange groves," he said. "Nowhere in the State are the conditions so favorable for olive culture, as our soil and climate seem specially adapted to this variety of fruit. The trees are free from the diseases and insects common in other localities."

RABBIT DRIVE.—The rabbit drive south of Reedley last Saturday resulted in the estimated killing of from 2500 to 4000 rabbits. As a genuine success the drive was lacking in proper management. The drive covered too much territory, in that fences prevented the forming of lines in many places, thus letting many more rabbits escape than were killed. About 1000 rabbits were killed in the corral. The gunners, however, did effective work in the drive, and 1500 would be a low estimate of the number killed by them.—Reedley Exponent.

Los Angeles.

WHAT THE ORANGE CROP WILL BRING.—Some exaggerated reports have been published in regard to the probable returns from the present orange crop. The truth is good enough. Estimating the total shipments at 11,000 carloads, and reckoning 90 cents per box f. o. b. as the average price for all the fruit, including seedlings, would give a total amount of \$3,326,400 to be distributed in southern California for this one crop, or enough, if evenly distributed, to support a population of 5000 in comfort.—Los Angeles Times.

Monterey.

The supervisors of Monterey county have endorsed the position of District Attorney Zabala by refusing to pay \$1000 or any other sum to aid the Salvation Army colony at Soledad. This colony was hooded in the East and on this slope, and thousands of dollars were obtained to help it along. It is an enterprise of the Salvation Army, the owner of the lands, and the members of the colony. There is no more warrant for Monterey county to put up money to help out this private enterprise than there would be for it to aid any of the irrigation companies of that county or the German colony near Salinas. It is a bit surprising that a man like ex-Mayor Ellert would advocate such an appropriation of county funds. The Soledad colony is probably all that its promoters claim for it, and we hope it will be as much of a success as has been predicted, but it is not a healthy or hopeful sign to see it asking and battling for county aid.—Pajaronian.

Orange.

A LIVELY HAY MARKET.—The price of bay has fluctuated during the week as never before in the memory of the oldest inhabitant. On Wednesday last, before the rain of that night and Thursday, the price had risen to \$20 a ton. Fred Mickle, the West Anaheim hay operator, held his hay at that figure. After the rain on Thursday hay was quoted at \$12, although it is doubtful whether much was sold at that price. At the Southern Pacific depot a carload of Arizona alfalfa hay was received, which was on Tuesday held at \$17. Yesterday the price of hay was quoted as advancing to \$18, and if rain holds off the price may go to \$20 again. Fred Mickle is holding his at that price. If we have rain, however, the price may go tumbling down.—Anabem Gazette.

San Benito.

THE SPRECKELS PURCHASE.—The purchase of a portion of the Tequesquite ranch by Claus Spreckels at \$45 per acre seems a very good price for that tract of land. It is situated on the north side of the Bolsa road leading to Gilroy, extending to Soap Lake, the greater portion of which is thoroughly impregnated with alkali. The land has been used for pasturage and on which the feed was always considered of a very poor quality. The part sold contains 9900 acres, making the purchase price \$445,500. This land has been assessed at something less than \$15 per acre, and at these figures Mr. Henry Miller of the firm of Miller & Lux always took grave exceptions, for the reason, as he said, that it was all out of proportion. Last year he threatened if a reduction was not made in the assessment to make trouble for some one. Since the sale of that portion of the ranch has been made we have had occasion to examine the assessment roll of last year, and find that 8861 acres of the Tequesquite ranch in this county were assessed at \$96,740, a fraction, on an average, of over \$11 per acre, one-fourth the price charged to Mr. Spreckels.—Hollister Bee.

San Bernardino.

SUGAR BEET NOTES.—The past week has given much encouragement here to the beet farmers. Within eight days we have had 1.11 inches of rain, which has put the surface of the beet land in excellent condition for planting and germination of the seed. Some of the land is not yet wet through to the moisture below, however, and on such land a heavy, soaking rain is much needed to assure its retaining moisture through the growing season. Although the chances for a soaking rain are now daily growing less, the continuation for another month of showers such as we have had the past week will give on the Chino ranch a fair beet crop. A considerable acreage of Chino ranch land is yet moist from below by our natural sub-irrigation. Some of our neighboring beet growing sections lack this feature and at the same time have had less recent rains than we. Farmers in those sections are much discouraged. Present prospects point to a very light crop at both Hueneme and Alamitos. Planting on the Chino ranch is now progressing steadily, and a number of the first fields planted are now showing rows of green. Since the recent rains a number of farmers have commenced planting who had been quite discouraged before.—Chino Champion.

San Diego.

Those in a position to know state that the bay crop in this county will not amount to more than half the usual amount, and that had it not been for the late rainfall of half an inch, the crop would not have amounted to more than a third of the average crop.—San Diego Union.

San Luis Obispo.

CELERY INDUSTRY.—Mr. Morrison, one of the promoters of the celery farm on the Steele ranch, near Oceano, arrived this week and active operations will begin at once in this new industry. A large amount of labor is necessary in preparing the land for the reception of the seed and plants. About fifty or sixty men will shortly be put to work on the farm and we understand fifteen families will soon arrive to make their home in the valley.—Arroyo Grande Oracle.

Santa Clara.

HEAVY SHIPMENTS OF PRODUCE.—The total overland shipments for the present year up to last Saturday night amounted to 18,650,990 pounds as against 8,343,350 pounds during the corresponding period last year, a gain of 10,297,610 pounds, or 125 per cent. When it is said that last year's record up to this date was ahead of that of any preceding year it will be seen that this record is indeed a most remarkable one, and one which is difficult of explanation. As a matter of fact it was not until the week ending June 5th that the figures of total overland shipments equaled those during but little more than two and a half years in 1897 up to last Saturday. The Eastern shipments during last week amounted to 1,341,565 pounds, while during the same week last year the overland shipments amounted to but 606,030 pounds or 735,535 pounds less than those of last week. Dried fruit continues to move out in immense quantities, yet there seems to be a large tonnage left in the valley. Dried prunes still lead in point of tonnage with 659,465 pounds. Wine takes second place with 242,385 pounds. Apples third with 119,400 pounds. Canned

goods fourth with 109,575 pounds and dried peaches fifth with 75,750 pounds. There were also fair-sized shipments of dried apricots and pears.—San Jose Mercury, 22nd inst.

Santa Cruz.

BEE NOTES.—Early sowings have commenced and several hundred acres have already been seeded to beets. All the upper part of the San Juan valley has gone dry this year. Some of the land prepared for sugar beets is being sowed to harley and the rest will be left fallow. The same course is being followed with most of the beet lands in the Salinas valley. As a rule winters in the Pajaro valley are too wet to allow our farmers to do the best possible work on their land. The past season has been an exception, farmers having been able to work through the winter with no lost time, and the land is in a fine state of tilth. Splendid crops are assured in this valley.—Pajaronian.

PAJARO VALLEY FRUIT NOTES.—The McBains are operating their sprayer in this valley, and the rapidity and completeness with which the work is done is a revelation to all who have seen their work. They can spray a thousand apple trees per day. We predict that the Logan blackberry will create a sensation when placed on the market, and will become as popular as the Loganberry. Unless cold weather prevents there will be a few shipments of strawberries from this valley early in April, but it will be four weeks before the berry season will open.—Pajaronian.

Sonoma.

The dairy herds of Sonoma county are being subjected to the tuberculin test, this being made necessary by an ordinance passed by the San Francisco Board of Health forbidding the importation into the city and county of San Francisco of any dairy produce which came from dairy herds not having been subjected to the test.

CLEAN FRUIT MOVEMENT.—We have reached a crisis in the matter of fruit growing. Never before have the fruit growers of various sections been so thoroughly aroused to the need for clean fruit, as well as to the urgent necessity of pruning and thinning, to give better grades. With increased production and the failure to secure necessary concessions from transportation companies to offset lower prices, the question of profit becomes more and more serious. * * * Energetic growers of the principal fruit-growing sections are heading every effort to improve the quality of their products. Citrus trees are fumigated regardless of expense, deciduous trees are sprayed as often as required and every colony of the *Vedalia cardinalis* and other predaceous insects that can be had are made use of in the effort to produce the cleanest fruit possible. Sonoma county fruit growers will not only have such fruits to compete with in the market, but it is highly probable that fruit shipped to San Francisco and other markets will be rigidly inspected to prevent the dissemination of insect pests. Practical growers have demonstrated that it is less expensive to prune, spray and thin than to handle the culls at the end of the season, to say nothing about the difficulty of disposing of them at any price, as well as the crowding out of better fruit and cheapening the price.—Sonoma Farmer.

Stanislaus.

A FARMERS' CLUB agitation is on at Modesto. The committee in charge of the movement is as follows: C. N. Whitmore, B. P. Hugin, Jas. Thompson, V. E. Bangs, T. K. Beard, A. L. Rutherford and J. I. Jones.

Sutter.

AT THE YUBA CITY CANNERY.—Preparations are being made for the approaching busy season. A force of men is at work putting down a cement floor in the cooking-room, which will be quite an improvement over the old wooden floor, both for convenience and in a sanitary way. The steam and gas engines and other heavy machinery are being put on a concrete foundation. The plant was never in better condition than at present.—Appeal.

Trinity.

The Trinity county supervisors have passed an ordinance providing that all persons raising, grazing or pasturing sheep in Trinity county must take out a license and pay 10 cents for each sheep owned by him or in his possession. The ordinance provides a penalty for its infraction. Another ordinance passed grants a bounty of 15 cents for each lamb born between March 1st and May 1st to the flocks of any person engaged in raising sheep in Trinity county.—Valley News.

Ventura.

BEE SITUATION IN VENTURA.—At Hueneme the continued dry weather is making the farmers cautious about planting beet seed when there is grave doubt about a harvest resulting. A correspondent in the *Express* says: "One of the stipulations relative to the building of the sugar factory at Oxnard was that the farmers in that vicinity were to plant 10,000 acres in beets, the Oxnard company furnishing the seed, which was to be sold at \$2 per acre. The farmers have been notified, but a large majority say it will be useless to plant without rain, and that they would take the seed gladly if a crop would be guaranteed. Just how the affair will terminate cannot be settled at present, but the Oxnard company is unwilling to lose \$20,000, the amount invested in seed."

OREGON.

CROP OUTLOOK.—The outlook for good crops of all kinds in the Pacific Northwest is cheerfully favorable in all but a few localities. Winter wheat is in fine condition, and owing to the favorable fall the acreage of winter wheat is unusually large in western Oregon. Owing to the mild winter grasses have already made a good growth. Live stock is generally in good condition, and an unusually large and good clip of wool is anticipated. Fruit trees are in much better condition, as a rule, than they were a year ago, and are receiving much better care. While California has been suffering from drouth the rainfall has been over the average in the western portion of Oregon and Washington, and in the greater part of eastern Oregon and eastern Washington the land is now in fine condition.—Portland Agriculturist.

LESS than twenty years ago a veteran lumberman was heard to laugh at the idea of making paper from poplar and spruce wood. He claimed it was impossible. Now the wood-pulp industry consumes more than half of all the spruce cut in this country. That skeptic belongs to the class of men who scorned the idea of ocean steam navigation. One very learned man, Dr. Lardner, in a lecture delivered at Liverpool, said: "As to the project which is announced in the newspapers of making a voyage directly from New York to Liverpool, it is, I have no hesitation in saying, perfectly chimerical, and they may as well talk of making a voyage from New York or Liverpool to the moon." The skepticism of that age was great. The chief naval architect of one of England's dockyards said to Scott Russell: "Don't talk to me about iron ships—it is contrary to Nature." Fortunately the knowledge of the world is not all locked up in the brain boxes of a few men.

HORTICULTURE.

Prof. Pierce on Caprifigation.

The caprifigation puzzle still remains a great horticultural mystery, so far as its applicability to California is concerned. RURAL readers will remember that some months ago we published a manifesto addressed by the State Board of Trade to the Secretary of Agriculture, asking for the aid of the United States Department of Agriculture in introducing the insect to California. This manifesto was written, we presume, by Mr. E. W. Maslin, who has been a great interrogation on this subject of caprifigation for the last fifteen years. We are not aware that the communication has ever been officially answered, but we find a statement by Newton B. Pierce, assistant in charge of the division of vegetable physiology and pathology at the Pacific Coast Laboratory, Santa Ana, Cal., which is interesting as presenting a new and important contribution to current discussion of the subject:

Importance of Fertile Seeds.—It is thought probable by many of the fig growers of California that the cultivated varieties of the fig now grown in the State require pollination to perfect their flavor. That a fertile fig will possess a different and most probably a finer flavor than an inferior one seems almost certain when we know the very large number of seeds possessed by this compound fruit. It is also well attested that at least some of the better varieties mature their fruit more perfectly when pollinated than when ripened without pollination. It is believed by the writer, also, that much of the loss now sustained throughout the State owing to the souring of figs upon the trees would be avoided were the fruits fertile. In this case the excessive juices of such fruits, which now admit of their ready fermentation, would be appropriated by the many individual fruits of the fig in the formation of the hundreds of embryos each fig would contain. That it is excess of fluid in the fig which admits of its destruction through fermentation has been clearly proved by carefully conducted experiments by the department.

Views on Caprifigation.—As leading steps have been taken and are contemplated for the early introduction of the insect known to aid in fig pollination in the old world, it may be timely to present some views respecting the theory and practice of this matter of pollination or caprifigation. In 1890 the writer made a special study of the process in Sicily.

The Capri Fig.—It may be first said that the further importation of Capri figs is unnecessary; the wild fig is already widely distributed in the valleys of California.

Secondly, it should be remarked that the Capri fig has probably nowhere in California been planted up to the mountain timber line of the State, and quite certainly not on a large scale nor widely among the native shrubs and trees of our mountains.

Thirdly, in Sicily caprifigation is conducted by bringing already infested Capri figs from the mountains and hanging them upon the trees of the cultivated varieties in the valleys.

Again, Capri figs growing in the orchards thus treated are not at this date (the date when the cultivated varieties are treated as above) either in a state of development proper for their use, nor do they contain the blastophaga, or fig wasp.

The Permanent Home of the Blastophaga.—Two facts no appear clear: First, the Capri fig is not in the proper stage of development to be used for caprifigation when the cultivated varieties require it if it is grown in the orchard at the same level as the trees to be pollinated; secondly, the insects are not found at that date in the Capri figs so grown, and they are probably not found at any time during the season if the trees are grown in the valley orchards.

That the blastophaga is not found infesting the Capri figs in the valley orchards, nor the cultivated varieties unless infested figs are first brought from the mountains, where wild shrubs and trees grow naturally, appears as good evidence that the insect is in no way a constant parasite or inhabitant of the fig, but that it has its permanent home in the mountains, perhaps as a gall-producing insect of some of the native plants of the region it inhabits, other than the fig.

Past Methods Incorrect.—If the views are correct, then it would appear that the commonly promulgated idea of importing infested figs, or trees bearing infested figs, is at present premature and may not prove effective in permanently introducing the insect.

If the above views are right, then it is important, first, to learn more of the blastophaga by a thorough study in the mountains of Sicily or some other favorable region where the insect is known to exist permanently; second, to study the habits of the insect and its natural host plant, if such there be.

The natural host or hosts of the blastophaga being known, it may be the effort of those interested to establish extensive plantations of the host of plants in like situations in California, particularly in the

mountains, and among them to widely distribute and establish the Capri fig. This work accomplished, it would then be an easy matter to permanently introduce the parasite.

The Eastern Pear Blight.

It is pretty well established that we have in some parts of the State a serious disease of pear trees which is closely analogous, if not identical with, the Eastern pear blight. It has made its clearest manifestation on irrigated land in the far interior valley of the State. For this reason many of our readers will be interested in an abstract given in the *Country Gentleman* of a lecture given before a New York horticultural society by Prof. B. M. Waite of the United States Department of Agriculture. He traced its history from 1793, as mentioned by Wm. Wenning of New York, down to the discovery in 1879, by Prof. Burrill of Illinois, that it was truly the work of a living creature—a microbe, though one of the smallest of its class.

A Bacterial Disease.—These microbes are found in abundance in the disease, can be cultivated, and the disease reproduced in healthy trees. They cannot be killed by cold, but die at a temperature of very hot water. The host plants are the pear, apple, crab, quince, serviceberry, etc. The microbes move en masse from one cell to another, breaking down the cellular walls, passing in millions through and between.

Spread of the Blight.—In blossom blight the microbes appear in the nectar and penetrate the nectaries, multiply and go down the stem. Bees visit the blossoms and carry the microbes from flower to flower. The disease spreads with great rapidity; only the brief time of blooming cuts this short. Spreading through the fruit spurs, these are killed to the bough. The virus, when it appears outside, can be carried only by special means—birds and man. Even after blossoming, there is possibility of infection of the green tips. The disease may also start in tender growing bark. In artificial infection in the field it was never spread except where punctures existed. When started in tender twigs it spreads downward till it meets cells too firm to be affected. From the fruit spurs it will spread up and down, girdling the branch. If the woody cylinder is uninjured, the branch may live a year or more; but hot, thunderous weather causes the microbes to overflow into the cylinder, and the branch collapses suddenly. The microbes die if they cannot spread. If any of them live till fall, they may live over till sap runs in the spring, and then spread rampantly. The hold-over blight will spread upward, and the gummy virus runs down, ready to spread the infection.

The blight varies according to the tree; some varieties are easily attacked, others are more or less immune. It has nearly driven out the Bartlett and Vicar from Southern orchards. With very fertile soils and rapid growth, pear culture is almost hopeless. Fertilizers have an effect on the disease, but it is not easily shown. In an experiment with 200 pear trees in plots, intended to show the effect of nitrogenous manures on blight, all the trees blighted. Moisture favors the disease; drouth restricts it. The one factor is the presence of the germ, no matter what are the conditions. Bordeaux mixture will kill most of the microbes—not all. This would require constant spraying. Filling holes in the trees with drugs is nonsense.

Removing Diseased Parts.—The true remedy is, first, cutting out all diseased wood intelligently, and cutting out late in the season all hold-over blight. In August and September the twig blight is plainly visible. Cut out all such twigs and branches down to sound wood. If blending into sound wood, give wide margin—1 or 2 feet. Be careful that the bark is sound where cut. Do not cut into sound wood with infected knife. If you do, cleanse knife with disinfecting solution. Cutting out in the growing season is not of much use, the disease spreads so rapidly. It may, however, be done in periods of drouth. Treat the disease always as infectious. Watch every evidence, and destroy at once.

With fruit spurs low down and sprouts on trunk, the blight gets quickly into the center of the tree. We must train and prune our trees differently. To fight the disease, the vase form of top is better than the pyramidal. To produce the former, grow three shoots on stem, cut back and grow two on each of these, cut back and grow two more, and so on. This produces a low head, broad at the top, with fruit spurs above and smooth limbs below. This prevents the rapid spread of the disease and aids in cutting out when it gets a foothold. The pyramidal form may also be modified to carry out this plan. Prevention is better than fighting.

Grafting Olives and Figs.

Judge A. L. Rhodes of San Francisco is an enthusiastic horticulturist, as well as an eminent jurist, and he shows his horticultural acumen by the following very perspicuous description, in a letter to the

Chronicle, of grafting methods which have yielded him a high percentage of successes. Judge Rhodes' orchard is near San Jose:

Bark Grafting.—The stock, where cut off, may be from $\frac{1}{2}$ to $2\frac{1}{2}$ inches in diameter; the scion about $\frac{1}{4}$ inch in diameter, the lower end to be formed by an oblique cut of about $1\frac{1}{2}$ inches. Split the bark of the top of the stock about 1 inch, raise the bark at the sides of the split slightly, insert the point of the scion between the bark and wood of the stock, at the split, and press it down the length of its oblique cut. Fasten it by binding twine around both stock and scion, about ten times, very firmly. Apply grafting wax to top of stock and scion.

If the bark of the stock be three or more years old, make two slits in it, about $1\frac{1}{2}$ inches in length, the width between them equaling the width of the oblique cut of the scion, raise the bark between the slits, cut off about half of it by a sloping cut, then insert the scion and press it down, and bind with twine and apply grafting wax, as above directed. Cotton wrapping twine is of sufficient strength.

Stocks the diameter of 1 inch or more should receive two or more scions. Scions gathered a short time before their insertion are the most successful. The twine around the stock and scion should not be loosened until it indents the bark of the stock.

Protect the graft from sun and wind. Wrap paper around stock and scion, the paper to extend a few inches above the scion—or place the paper, in the form of a bag, over scion and stock—and secure the paper with twine, tied around the stock in a slip-knot.

Shield Grafting.—Cut the shield from a limb of about $\frac{1}{4}$ inch in diameter, length of shield about $1\frac{1}{2}$ inches, its thickness from $\frac{1}{8}$ to $\frac{1}{4}$ inch, and its bud near the middle of the shield. Make a cut in the stock, through the bark and into the wood, its length and width a little greater than those of the shield. Insert the shield into the cut, so that the inner bark of the tops of the shield and cut will coincide, so that one side of shield and cut—and both sides, if practicable—will coincide. Place the flap of the cut over the shield, and fasten flap, shield and stock together very firmly with twine, and protect them with paper tied around them.

Dormant shield bud is the most successful, but if it be not dormant, cut off the flap just below the shield bud before binding with twine. Don't remove the wood from the shield.

Bark grafting may be performed at any time when the bark of the stock can be readily raised—when ever the bark will "slip." I grafted in that mode in each week of April and May and the first of June, and in September. Failures not 5 per cent. Twelve scions inserted about the middle of last September are all growing. Shield grafting is the most successful in the spring. I prefer the bark grafting, as the shield buds may not start for months, or even for a year.

Grafting Figs.—Figs may be successfully grafted by the shield grafting mode. Don't remove the wood from the shield. Before inserting the shield cut off a portion of the flap, so that the shield bud will not be covered. Tie with twine and protect with paper, as when grafting olives. They may be grafted in that mode, whenever dormant buds are found, for the shields. Twenty-four shields were inserted by me, at several times, during one spring, and there was only one failure.

FRUIT PRESERVATION.

Important Points on Olive Pickling.

By C. E. MACK at the University Farmers' Institute at Florin.

Olives in Sacramento County.—Locally there is considerable interest taken in olive culture. It is true no large area is planted to the tree referred to, still a few trees can be found in nearly every yard, occupying the same place in the economy of the household held so long undisputed by the time-honored hen. It is a very noticeable fact that the fruit of the olive tree is no longer allowed to drop on the ground, there to decay, but on the other hand every olive is saved and pickled for future use. In some instances people of this community have gone miles to even single trees in order to secure enough for their wants. The people here have learned to appreciate sound ripe pickled olives in a way quite astonishing. Only one or two orchards have been started on a commercial scale.

That the tree will flourish and do exceedingly well here is no longer a conjecture—the gratifying conclusion can be seen in my own orchard three miles from here. It would not surprise me some day to see many acres of them on these arid plains. The lines are broadening that way now judging from the inquiries made concerning my experience with the tree.

Disposition of the Fruit.—An olive crop can be disposed of in various ways. It is possible to dry it; it can be made into oil, and lastly it can be converted into pickles. The market is too circumscribed for the dried product. The cheap foreign adulterated

oils have paralyzed the market for pure California oil—which is not always pure. Strictly pure, genuine foreign olive oil with the aroma of the tree was formerly made out of hog's lard, but nowadays it is made out of anything greasy.

Passing on to the third means of disposal for an olive crop and the one in which we are all more or less interested, I shall detain you as briefly as possible. At this point, before having perpetrated this paper on you, and while presumably you have the best of brotherly love for me and your minds are reluctant, I wish to impress it upon you that I am not an adept olive pickler. I do not want you to think I am trying to pose as an expert in this line, for I am not. Please dismiss as a fallacy any such suspicion. I have pickled a few olives yearly for several years. This year I pickled more than ever before. Some of them turned out first-class, others second-class and there were still others that were so miserably poor that conscientiously I could not classify them at all—turned them, in fact, by the lye treatment into an inferior grade of soap. I purposely brought around the above results in order to learn to some extent the outcome of several experiments.

Recipes Must be Used With Intelligence.—I used the process recommended by the State University for the base and deviated above and below it for other results. I kept data and this paper is simply a recapitulation of my notes. The olives I experimented with were Mission, Manzanillo, Rubra, Pendulina, Uvaria and Columella. The objects to be attained in treating olives are, first, to remove the bitterness, and second, to preserve them so that they will remain sound and good for even years. The pickling processes, as given gratuitously by various growers and others, seem easy and simple, but if you will experiment in a practical way you will find a number of complex and discouraging circumstances before you are through with any of them. That every man can convert his olives into first-class pickles that will keep for one year sound and good I very much doubt. Nearly any one can pickle olives so they are good and palatable and do very well for his family, which will blindly overlook little shortcomings because "papa put them up." I believe it is within the scope of any ordinary man's ability, provided he is studious, observing and superlatively painstaking after a year or so of experience, without something unforeseen develops, to pickle olives so that the consumer thereof will say they are good and without the "papa" sympathy.

Pickling olives requires patience and observation, and the pickler should be a man of nice enough discrimination and judgment to deviate from the standard methods in order to suit any peculiar condition which might turn up. If he persists in following closely some published process, no matter from whom or however good, he will work at a disadvantage, for, be it remembered, some varieties contain more bitterness than others, and even the same varieties will vary in the same orchard the same year. When the ripe pickled California olive is properly treated it has no competitor. This necessitates caution and careful handling and grading.

Pickling the Olives.—The first act in successful pickling (and which I will demonstrate later on) is properly picking the olives from the tree. The fruit must not be beaten or knocked or raked off, but it must be carefully picked by hand and tenderly handled thereafter as long as it remains in the possession of the pickler. Some of the best picklers pick their olives in pails in which there is some water to break their fall, and I think, while it may not be very convenient, the idea is an excellent one. I experimented on this point, and I am prepared to say it is imperative that olives must not be bruised by a fall or pressure. I took an empty barrel and let olives drop into it from the top in just the manner one would use if he were in the orchard. I then let an equal number (two gallons) drop about 8 feet into the barrel. I also put some water into the barrel, and put in olives as described in the first experiment. I then placed the different lots in different crocks, and in a warm temperature, favorable to the production of blue mould, and the result was that in only a few days patches of mould could be seen all over the surface of the water containing the olives which had the 8-foot fall, also a mucilaginous substance around the edges of the crock. The olives that had been simply rolled into the empty barrel in a few days longer produced an abundant crop of mould, and the result was that only those whose fall was broken by the water in the barrel remained entirely free from mould. Many soft olives could be found among those that had been bruised by the 8-foot fall, while such was not the case where water was used. It seems to me this simple experiment teaches a lesson. They must be sound and reasonably ripe.

Best Condition for Pickling.—My experience has taught me that if one must err, it were better to make the mistake of picking them underripe than overripe. This will insure a firm pickle, which is far more desirable than a soft one, and infinitely less dangerous to handle. My test is my eye to some extent, but the sense of touch greatly more. The color alone is not an accurate test enough, particularly to the one with short experience. The olives I now propose to speak of were pickled when they

were very dark red, or just before they took on the beautiful velvety black so characteristic of the olive—except in the case the Columella, which was pink. They were all firm and sound at the time of pickling. The Mission and Columella were just a little under-ripe.

To Remove the Bitterness.—The object of the pickler is to neutralize the intolerable bitterness of the olive, which can be done in several ways. While there are several disagreeable acids in the olive, the active principle is an acrid substance called olivil, which is soluble in water and can be neutralized by soda and potash. I used the water and potash processes. The Mission was the variety I experimented with by the water process. This process from a superficial view seems like simplicity simplified, but it is not: it is concentrated patience multiplied. You only have to change the water twice a day, from forty to sixty days, the text-books tell us, but I found that from seventy-five to ninety days would come nearer to the mark; and during all this time bacteria and other micro-organisms are not far away, waiting for a soft or bruised olive to develop, in order to make it their breeding place. If they find one the entire lot will be spoiled in an incredibly short time. I purposely neglected to change the water in one crock of olives for only a few days, and the result was the entire lot took on a peculiar odor and an intolerable taste. About the time of this change floating mould made its appearance to add its quota of interest to olive pickling. In the course of a week a visible aquatic organism full of activity and danger could be seen having a glorious time at my expense. Thus it will be seen that a week's neglect (and much less) will result in filling your tanks of olives with bacteria, micro-organisms, visible organisms, mould, scum, putrid ferments, and so on. The other crock was filled with the same variety of olives. Both had the same treatment up to the time I concluded to spoil one lot. I changed the water on the other twice daily. The olives were slightly submerged, the barrel cleansed every week by removing the olives with a wire scoop and scalding the barrel with hot water. It was in a dark place, and every means known to the writer was used to prevent the germination and development of dangerous germs. The result of this heroic treatment was that after three months of constant care the olives lost by diffusion most of their bitterness. They retained their natural color, and for richness and delicacy of flavor they were above lye-treated olives, for none of the oil had been saponified. I thought they were the best I ever tasted, but it was another case of "papa pickling them."

The Brine.—The greatest drawback with the water process was the time and patience required. Much of the danger of the water treatment would be lessened if sterilized water were used. After I had extracted enough of the bitterness, I rinsed them and put on a brine, as recommended by the University—that is, three ounces of salt to a gallon of water. This was boiled and cooled before applying. This weak brine was allowed to stand on the olives two days, when it was taken off and a stronger brine, made of eight ounces of salt to the gallon, put on. I left this for a week. It was drawn off and another still stronger brine, fourteen ounces salt to the gallon, was put on. The reason brines of different strength are used is because if the olives are immersed in strong brine first, they will shrivel and wrinkle; but, by gradually hardening the tissues of the flesh, this can be avoided. I tried the experiment of putting olives in a brine of 1½ pounds of salt to a gallon of water, and they were shriveled past recognition.

The Lye Process.—I tried the lye process. I used crocks with wooden faucets for drawing off the lye water, and one small barrel which had been treated with a sal soda wash. I treated all the varieties named at the beginning of this with solutions of various degrees of strength. The lye used was Greenbank, which I obtained in San Francisco. I used one solution so strong that every olive was soft on the outside, while the inside layers were not penetrated. I used another weaker solution, six or seven ounces to a gallon, and the Manzanillo came out best, followed closely by the Mission, while the Rubra, Pendulina and Uvaria oil varieties were entirely spoiled. I kept weakening the solution until I got down to 1 per cent, or less than a pound to ten gallons, and I firmly believe that they gave me the best results. It is true I gave the olives an extra bath or two, but in the end there was much less loss of color, the olives were firmer and the disagreeable feature of occasionally finding a soft and bad-tasting olive was not present. I will briefly describe the most satisfactory experiment I tried. After soaking the fresh olives in pure water a few days, which was changed daily, I dissolved a little less than a pound of lye for ten gallons of water and poured it on the olives. This I allowed to stand four or five hours. I drew it off and filled the crock up with fresh water, which was allowed to stand for two days. I kept repeating the above until enough of the bitterness had been removed. I repeated this two or three times. By cutting to the pit you will see a discoloration, which is indicative of the extent to which the lye has penetrated or neutralized the bitterness.

When the olive is discolored entirely to the pit it

means that the lye has neutralized the acid substance. It has neutralized it but has not removed it, which is done by the repeated cold water baths. I found that the weaker the solution the less liable the olive was to spot on the side where it came in contact with other olives. The strong solutions of, say, half a pound of lye to a gallon of water, entirely removed the black from the skin of the Rubra olive and left it a straw color, while the weakest solution did not remove enough to hurt its appearance. The Manzanillo olive came out as black as when it went in to nearly all of the baths. The Pendulina was another tough-skinned variety with me. After removing the bitterness, the olives were washed thoroughly and put in brine made as described some time ago.

A Summary.—Before closing this hastily written paper, let me add a summary of my experience:

First—Water-treated olives are best.

Second—Have more patience than Job.

Third—Don't forget cleanliness.

Fourth—Keep data, because human memory is short and uncertain.

Fifth—Take Prof. Hayne's formula as published in the report of the agricultural experiment stations for the year 1894 and 1895, and obtainable by simply asking for it, for your guide.

Sixth—Weaken your lye solutions and make frequent and short applications in place of one long one.

Seventh—Sample every new brand of olive you can find in order to see what others are doing.

Eighth—That details are essential and must not be overlooked.

Ninth—That a small quantity of sound olives are worth a carload of bad ones.

Tenth—That small oil olives like the Rubra, containing five to ten per cent more oil than the Mission, are better for pickles than the large varieties on account of their oil contents, though unsalable on account of their size.

THE FIELD.

Value of Sorghum in a Dry Year.

It is fortunate for California live stock that Californians have learned much about the forage value of sorghum varieties during the last few years. No doubt the utilization of the low moist lands of the interior valleys for growth of sorghum will prove of very high importance during the coming summer, when, owing to winter-drouth, the forage supply promises to be short. Wherever a small amount of land naturally moist, or which can be soaked from a well or other small source of irrigation, can be had, a large amount of sorghum can be grown. In Kansas, also, they have learned much of the value of sorghum, and some of their methods, as described by a correspondent of the *Prairie Farmer*, will be suggestive to our people.

Yield of Sorghum.—For five years we have grown this plant for summer feeding of cattle, and in 1897 I grew several tons of it for winter feeding. I have never found anything that would produce so much feed to the acre or that I consider as valuable for stock. No other useful plant, of which I have any knowledge, will endure drought so well, and make a profitable crop in a dry season. I have grown at the rate of sixteen tons (green) to the acre when no rain fell after it was 6 inches high, until it matured; and have proved that fifteen head of cattle can be fed for two months on the product of a single acre. When grown for summer feeding, we seed at the rate of from four to five pecks per acre, drilling it in with the wheat drill, using all of the hoes, and sowing from the 15th of May to 1st of July, on a clean, thoroughly mellow seed bed.

Sorghum Hay.—When grown to be cured for winter, more seed should be used—probably about two bushels per acre will be best. We cut it with the mowing machine and let it lie on the ground for a week or more to cure, then bind up about one-third of it—such as can be gathered up straight—into small bunches about 6 inches in diameter, as it is heavy to handle. We put it up in large cocks, putting from 200 to 400 pounds in a cock, and set up a row of small bundles around it. Tie the tops closely with binder twine; this will keep all rain out of it, and in the course of a few weeks it will cure out thoroughly, so that it can be packed away for winter use; 1896 was the first year that any was cured in my neighborhood, as the three preceding years had been so dry that pastures failed, and all that was sown was fed during the fall. But probably 200 tons of it was put up in my neighborhood in 1896 and 1897.

Sowing Sorghum.—I find that it is not best to sow sorghum until the weather is warm and settled, and the soil well warmed and in fine condition, but I prefer to plow early and work the land two or three times either with a two-horse cultivator or a harrow, so as to get it in fine condition before the seed is sown. If sown early, while the land is cold, it comes up slowly, and, if the soil is weedy, the weeds are likely to get a start of the cane; but two or three workings before sowing gets rid of most of the weeds

and it comes up quickly and starts at once into vigorous growth. We never grew a better crop than one that was sown on June 17th, and, although no rain fell on this after the middle of July, when it was 6 inches high, until after it had headed out, it made a heavy growth and was large enough to feed before Sept. 1st. If our pastures are short, we begin feeding it as soon as it shows the heads; but it improves in quality until it ripens. When sown thickly, it makes very little seed, but when sown in drills, 3 feet apart, with five or six plants to each foot of drill, it will make forty bushels of seed to the acre under favorable conditions.

Feeding Sorghum.—It is wise when first beginning to feed sorghum to cattle to feed lightly for a few days and to watch the cattle for an hour after eating, as it sometimes produces bloat similar to clover. We have never known personally a case of it, but there have been such cases. Still we believe it to be just as safe a food as green clover. In summer feeding during drought, we scatter it on the sod in the pasture and find that the stock eat it with no waste at all. But in winter feeding, as the land is often soft and muddy, it is best fed in good mangers, which may be made portable if the stock is to be fed in lots out of doors.

What an Acre Will Do.—From our own experience with this food, we are led to believe that three times as much stock can be fed from the product of an acre as from any other forage plant that we have ever grown. And by growing a plot of it to be fed green, in case of need, and a few acres to be cured for winter feed, one can easily double the amount of stock kept on his farm. The variety which is usually sown for this purpose is the Early Orange. This is a sweet variety, which is largely grown for making syrup, and which is not liable to lodge, and, even if blown flat by storms while growing, will raise up straight again in a few days. We have not experimented with any of the non-saccharine kinds, such as Kaffir corn, and think that the sweet varieties are better for forage.

Sorghum for Hogs.—There is another use for sorghum, which we greatly desire to see experimented with, and that is to grow it for hog feed. When grown for this purpose, it should not be sown broadcast. We have a neighbor who has sown it in this way for two years, and put his hogs on it, with the result that they trailed it down and wasted three-fourths of it. But, if drilled in rows 3 or 3½ feet apart, with six or eight plants to each foot of drill, it will make a very heavy growth, will develop the sweet, and the hogs will pass through the rows and tear it down as they need it, so that little will be wasted. I believe that from fifteen to twenty tons can be grown on an acre, and that this amount would feed a herd of fifty hogs for considerably more than a month, and that this would prepare them for profitable corn feeding. Kansas is the banner State of the Union for growing sorghum, and in 1896 over 750,000 acres of sorghum were grown for forage. We have not the statistics for 1897, but think that the natural increase brought it near 1,000,000 acres that year. We grew less than one and a half acres of sorghum the past summer, which was cut and cured for winter feed, and we have fed fifteen cattle and four horses from it for nearly two months. One firm in Kansas has wintered 1800 steers on the product of 235 acres of sorghum, which is nearly eight steers to the acre. No other class of farmers seem to appreciate sorghum as much as the dairymen, as it insures them against drought and enables them to maintain a full flow of milk through the fall months, when pastures are usually insufficient.

From Friends of the Pheasants.

We have often given accounts of warning against the Mongolian pheasants as pernicious fruit-eating birds. All accounts do not seem to agree, and we give the beautiful bird the benefit of the doubt, at least to the extent of printing what his friends say of him. C. A. Loud, in a letter to the *Santa Barbara Press*, has the following to say on the subject of golden pheasants:

I was amused in reading an article warning the people against the ring-neck Mongolian pheasant, saying they would devour the potato crop and harvest the fruit crop. Now, I do not think that there is a person who has studied the habits of the bird more carefully than myself.

Mr. Loud Recants.—Several years ago, when a resident of Corvallis, Oregon, and before I had seen much of them, I wrote several articles for the *Breeder and Sportsman* from hearsay. Since I became acquainted with this noble game bird I find him to be not only one of the finest for table food, but also one that can take good care of himself. It is true, they are fond of wheat fields—and what game birds are not? Do not our California quail invade the grain fields? I have never known them to injure fruit, though. In fact, they are never seen in a fruit orchard in Oregon, and as for potatoes, they never touch them in any way. They are fond of cabbage and will sometimes enter a vegetable garden and help themselves to a square meal; but

they prefer to be out in the woods seeking bugs, grasshoppers and worms. They very seldom alight on a tree, and all this talk about their destroying the crop is nonsense. Like all other game birds, they must have something to live upon. The meat they furnish repays what they eat tenfold. The Oregon people, where they are so plentiful, have ironclad laws to protect them, and woe to the man who enters an enclosed field and kills a pheasant. He had better be caught killing domestic chickens. We cannot get too many pheasants in the country.

In Santa Cruz.—The *Sentinel* says several pairs of these beautiful and valuable birds have been introduced into that county, and observers state that they are now to be found wild in several places in the county. Mr. Spreckels liberated the pheasants on the Aptos ranch and some of them have already gone beyond the limits. Those propagated by the game commissioners are also to be occasionally found. It should be remembered by all sportsmen that these birds are absolutely protected by California law at the present time, and that the game warden will not look upon their shooting with the least degree of allowance.

THE DAIRY.

The Silo in a Dry Season.

J. R. Boal of Lynwood Dairy, Los Angeles county, gives the *Cultivator* a very timely account of the value of the silo in such a season as this.

Waste of Corn Fodder.—In these times of uncertainty as to crops, and the consequent variation of prices in hay and grain, it behooves us farmers to take every advantage the seasons afford, and make the best use of those crops which we can successfully grow. Especially is this the case with dairymen, for it is he who appreciates having wholesome green feed for his cows at the time of the year when milk is bringing a good price. Only yesterday one of our most intelligent farmers said to me, "I did not put up a silo last summer just because I thought I did not have time, and this fall it almost broke my heart to have to burn up corn fodder enough to have paid for it."

In this part of the State the silo is comparatively a new thing, and consequently they are very scarce, for until recent years farmers have not felt the necessity of having them; but now that dairying is becoming such an important item in this part of the country, those interested are beginning to inquire into the subject. About twenty years ago the first one was built; now there are over 75,000 in use in the United States.

The Advantages of the Silo are Many.—Feed can be put into them that is of very little account when it is growing, such as first cutting alfalfa mixed with foxtail, malva, morning glory and other weeds, and after having been in a silo for six months or a year will come out a very good feed. By its use farmers can always have green, succulent feed, don't need to worry about dry or wet seasons, and can make their cows give the most milk when the price is the highest. Any kind of stock will eat silage and do well on it. It can be fed at all seasons of the year. When fed to beef cattle in large quantities they take on fat very rapidly. Silage can be fed at any age, from the time it is first put into the silo until it is three, four or even five years old. In a very excellent article written on this subject (and published in the *Cultivator*) by Miss Eshleman of Fresno, she speaks of feeding with the very best results silage twenty-eight months old. The feed can be stored in the least space and most economical building.

Silage Crops.—The corn crop, one-half of which is usually wasted by throwing the stalks on the ground in the pastures or corrals for the cows to walk over, or left standing in the field, and finally, after much hard work and annoyance, burned up, can all be saved and used to the very best advantage by cutting it up and put into silo. Alfalfa, oats or barley all make good silage, and, fed in that shape, will pay for the trouble and expense of building a silo and storing many times over. Some feeds are, of course, better than others. Sorghum contains too much acid; Egyptian corn is too woody. This same trouble we found last year with the horse bean. Corn makes the strongest and best silage, and what farm of twenty acres or more is there in this part of the State that will not grow some corn?

Lynwood Silos.—At Lynwood Dairy we have five silos. They are sixteen feet square and twenty feet high, and hold 160 tons of silage each. We have filled them all this season and four of them twice. That is a great deal of feed, you think, but most of you who keep a few cows can somewhat appreciate the amount of feed 350 cows can consume. This season we put up corn and oats, separately. We have now sown peas and oats together for that purpose and will plant corn later. During all this dry time we have kept our cows up to their usual flow of milk by feeding ensilage. It is the cheapest feed you can get. Our corn ensilage cost us last season less than \$2 per ton in the silos and the oats much less. With plenty of such feed, which can be had any season at

that price or less, very little \$12 or \$15 hay need be fed.

Beet Pulp.—Many say there are other new and cheap feeds coming into use. Now that sugar factories are getting started in this country, how about beet pulp? We fed this season 300 tons of pulp from Los Alamitos, and with very good results. I like it better than whole beets, but it is more expensive for us than silage. Then all of us are not so situated that we can feed pulp; the distance from factories and lack of ready cash to pay for it are hindrances. But silos every farmer can have. In fact, I do not see how any one who keeps any number of cows can afford to be without them, and it has been practically demonstrated in our own neighborhood by two persons, one milking ten cows and the other twenty-five, to be very advantageous and economical.

Cost of Silos.—A round silo that will hold sixty tons can be built for a little over \$1 per ton, or from \$60 to \$70 dollars complete, and larger ones proportionately less, and there is no reason why it will not last for ten or twenty years. What does that expense amount to compared to the benefit received? A cutting machine, carrier and horse power complete, with a capacity for cutting from four to five tons per hour, can be purchased for less than \$135. A few neighbors can combine and buy the cutting outfit and help each other when the silos are filled, and in this way be out very little money. By having a silo, enough can be saved of what is usually wasted each year to pay for all the trouble and expense of building and the filling of the silo. It is just these little odds and ends that are wasted or spoiled on the farms each year for the lack of care and attention at the proper time that keeps the average farmer at the mercy of the money lender. Now suppose you vary the usual order of things. Don't be farmer-like and wait until next fall to talk about putting up a silo; do your talking now so that next summer you can put up a building and early in the fall fill it. Farmers or dairymen have hard work and long hours, and they should take every advantage of feed and breed to get all the pleasure and money out of it that is possible.

Dairy Progress in Washington.

State Dairy Commissioner McDonald of the State of Washington has prepared his annual report. There was a total of 709,364 pounds of cheese produced in the State during 1897, as compared with 554,123 pounds in 1896. The butter production was: 1897, 2,094,427 pounds; 1896, 1,823,657 pounds.

Kittitas county is the leading dairy county. Twice the number of dairies in other counties are located in Kittitas, and the report shows that they have done a good business during the year.

The creameries in the southern part of Washington shipped nearly all of their butter and cheese to Oregon, and in the eastern part of the State shipments to Montana and Idaho were heavy.

The total amount of cheese shipped to outside points was 112,402 pounds, of butter 174,778 pounds.

The dairy commissioner says: "This State is now nearly able to supply all of the butter, cheese and other dairy products consumed here by the creameries in its own borders. In two years at the outside we will be producing more butter and cheese than the State will consume. The increase in the dairy business shown over the total of 1896 is very gratifying, and I believe that next year will show the same per cent of increase."

"The quality of butter produced last year was superior to that of the previous year. This was owing entirely to the fact that the butter makers had taken a course in the agricultural college and have learned the science of butter making. The strife among butter makers is very keen and the interest they are taking in the work of bettering the quality of their outputs is shown by the competition at the last meeting of the State Dairy Association. Prizes were offered for the best exhibits of butter and very many of the large creameries submitted samples. The score on a number of them was very close."

SHEEP AND WOOL.

Why Mohair Has Not Advanced.

Mohair growers are wondering why domestic mohair has not advanced in price since the duty of twelve cents went on. The Massachusetts Mohair Plush Co. of Boston, writing to the *Oregon Agriculturist*, holds that it has advanced some. They have paid more than they did last year, but imported mohair has not advanced much because no duty-paid mohair has come in. Turkey mohair will be imported at the advanced cost, as it must be used to get results which its peculiar characteristics insure.

Turkey Mohair.—This may be a good opportunity to place before the growers certain facts from the manufacturer's standpoint. Turkey mohair is all-year's growth, sheared in the spring. The market quotations are not on the stock as received from the growers. In Constantinople experienced graders go through large collections of fleeces, and several grades—not sorts—are made, the dealers having marks or letters designating their standard grades

for which they have been years making a reputation. The manufacturers in England and America test and keep a record of these grades. It is worth something to be able to buy just what is wanted for special work. Kid hair is packed by itself. Yellows—stained—are packed separately, and the grading goes so far that there are three grades of yellows.

Pure Bred Goats.—Turkey hair is pure blooded, uniform, long and bright, and fine according to the grades. American mohair comes on the market ungraded, long and short often in the same bale, while some good lots will have several bad bumps in them. The buyer makes a deduction from the possible value because of the not improbable bad mixtures. Mohair is always difficult to spin, but the shorter it is the more unmanageable. Year's growth is the most economical to buy at an advanced price, as it spins better and the percentage of shorts and noils combed out is far smaller. Mohair fleeces under four inches must find a limited use, and consequently will bring low prices. Mohair half or three-quarters pure competes only in a small way with Turkey, as it produces inferior effects, so that when the price of Turkey rises because of fashion or tariff there may be even no demand for low grades and so no advance in price. As very little American mohair will make a lustrous braid yarn, the fashion for braids only moderately affects the price of American, and that is the case at present. We have used several lots of domestic that convince us that it is possible to produce the best stock in this country, and our growers should hold the home market by raising the best stock, and not presume tariffs will make low grown, carelessly clipped, short growth either a creditable or profitable product. For the grower of raw stock, as well as the manufacturer, quality is the only just title to a protected market.

Dehorning Goats.

W. H. Hardy writes interestingly for the Oregon *Agriculturist* on dehorning goats. He is keeping goats on alfalfa in Arizona. Arizona is rather a warm climate, except in high mountains. Mr. Hardy says goats will quite frequently have two litters in a year, one in January and the other in July or August, but if the bucks are kept out from June 1st to Sept. 15th but one litter a year is had. Some flocks have quite regularly three litters in two years; the old ones have from two to three at a litter. Young goats or goats under one year old rarely have more than one at a time.

The Horns.—Mr. Hardy dislikes the butt end of a goat that wears horns. Last fall he got a fine saw and a pair of heavy pruning shears and dehorned the whole flock. He had then 800 in his home flock and interest in nearly 3000 others. He gathered together the whole flock and picked out 850 of the finest and best-fleeced young nannies, all fine breeding goats, and claims to have undoubtedly the finest lot of breeding goats to be found anywhere, and now they have but one butt end and that wears the tail.

Before dehorning he used to get up nights to relieve a goat in distress. One goat would get another goat's foot between his horns and hold him fast. In one instance he found on the range two goats fast in this way, both dead. Again, a fine imported buck's leg was broken in this way. This was not all. During the winter they quarrel and butt one another and quite frequently he would find three or four, quarter to half-grown kids, that had been struck in the quarrel. Now the flock rests quietly and there is no quarreling.

What Nannies Can Do.—It is true, when a nannie goes into the corral and finds her kid, and a stray or outside kid attempts to rob or ring in on the other side, the old nannie will catch the little fellow by the tail or ear and throw him 8 or 10 feet, and when they are trying to assort they have to look out or a goat will have hold of their pants and maybe a piece of skin will be pinched, but Mr. Hardy will not have a goat around him that has not been dehorned.

Precautions.—In dehorning, if the head bleeds too freely, a piece of cloth about 2 inches wide may be tied around it to stop the blood. A little carbolated sheep dip might be used if flies are bad. The horns are hollow and care should be taken to prevent flies getting into them. He lost four fine nannies by worms or screw flies. A little pains in tying the head would have saved this loss. If there is any dehorning done all should be dehorned, for the goats that have horns will butt the hornless ones at a fearful rate. After all are dehorned the goats lie close together in the corral like sardines in a box, all friendly.

THE POULTRY YARD.

Suggestions for Beginners on Breeds.

We will suppose that all that has been shown in the *RURAL* concerning the advantage of the hen-annex to the farm or orchard has produced some impression, and that the in-shipment of eggs from other States is to be checked. This being the case,

suggestions on choice of breeds will be very welcome to beginners. Mr. E. O. Roessle states his points in the line of suggestions very frankly in the *Country Gentleman* and they are very interesting.

Choosing of Breed.—The greatest puzzle is the choice of a breed. Every beginner in the poultry business says he wants good layers and good table birds. This is quite natural, and, in fact, it is what we should expect to hear. But let us first fully understand what kind of poultry business is contemplated. If our beginner is totally ignorant of all poultry, and cannot decide between a mongrel and a thoroughbred, he certainly needs a good instructor or some friend who can guide him right at the start. Although there are about a hundred breeds of poultry, there really are but few which are practical, useful and profitable.

The Egg Breeds.—The first quality, in my opinion, that a beginner should look for in any breed is egg production. Now there are a few breeds which are great egg producers. We can count them very quickly—the Leghorns, Plymouth Rocks, Minorcas, Wyandottes and Hamburgs. Of course, breeders of Brahmas, Langshams, Cochins, Andalusians and Dorkings will all make claims of wonderful records. These records may all be correct, because the nature of these breeds are thoroughly understood and the ability to make them lay well naturally follows. But I do not consider them great layers in the hands of any novice.

On the other hand, the five great laying breeds will not do their best, either, unless their natures are perfectly understood; but, inasmuch as they are natural layers, the chances are in favor of the beginner. It is possible, of course, to keep all five of these breeds, but it is not advisable. A beginner can do justice to two breeds at the start and possibly take on another later. Many of our most successful breeders, however, content themselves with one breed only, finding it difficult enough to care for and manage this, and to obtain from it the utmost the breed is capable of.

The Leghorns.—Of the Leghorns, the White, Brown and Buff are the favorites. Which to choose is a matter of fancy. The Whites are the oldest and a trifle the largest. The Browns are probably the most attractive in plumage, and the Buffs are the newest and most fashionable. They all lay large, white eggs and plenty of them, and are non-sitters.

Plymouth Rocks.—The Plymouth Rocks are Barred, White and Buff, and rank in the order named as to age. The first are the plainest, the second most attractive and the third the newest, and, like the Buff Leghorns, more the fashion. As to practical and money-making qualities, compared with the Leghorns they are far superior. First, they are hardier, more contented, almost as good layers and decidedly better table fowls. Their eggs are large and brown in color. Being sitters, they are capable of hatching their eggs and adding to the flock. This is an advantage they have in one way over the non-sitting Leghorns, but the latter will make up for this quality by continuing to lay. If the Plymouth Rocks can be broken up easily when broody, they are capable of laying almost as many eggs as their more active rivals.

Minorcas.—We come next to the Minorcas. The blacks are the originals and the best. The whites are not so popular. Larger than Leghorns, although of the same class, they are great layers of large white eggs; fairly hardy, good bodies, fair table fowls and handsome to admirers of a black breed.

Wyandottes.—Wyandottes are a large family. The most popular are the Whites, Silver and Golden. Of these, the Whites are most in favor; a short, compact built fowl, good foragers, quite contented, almost as good layers as Plymouth Rocks, and excellent table qualities. They make the best of broilers, good roasters and excellent mothers. They are increasing rapidly in popularity, and are to-day a recognized rival of the Plymouth Rocks. Hamburgs are great layers, but their eggs are a trifle small for commercial purposes.

Combinations.—If we wish to produce white and brown eggs, we must keep two breeds. The combination can be made as follows: First, White, Brown or Buff Leghorns and Barred, White or Buff Plymouth Rocks; second, Minorcas and either White, Silver or Golden Wyandottes.

Taking into account the non-sitting nature of the Leghorns and Minorcas, it is good policy to add Plymouth Rocks or Wyandottes rather than entrust the hatching to mongrels. If incubators are used, they will solve the problem.

After the breed is chosen, comes the most important of all, namely, care and management.

There is nothing to be gained by keeping poultry, if one does not properly care for the breed he has chosen and endeavor to get some return for time and money spent. Regular, systematic care and feed give the best results, and it is only by running one's plant on business principles that any success can be made.

If carelessness and neglect are to be a part of the management, then Barred Plymouth Rocks and White Leghorns will stand it better than any other breeds I know. If the contrary methods prevail, no breeds will give a handsomer return.

THE SUGAR BEET.

What it Means to Build a Sugar Factory.

Our readers in different localities who are thinking about having a beet sugar factory in their vicinities will be interested to note what a great thing a large factory really is and how it operates in stimulating all sorts of industrial activity in the region surrounding it. An impression of this kind can be clearly obtained by reading the following interesting account from the *Salinas Index* of a visit to what will be the largest beet sugar factory in the world.

Construction.—A representative of the *Index* made a visit to the site of the sugar factory lately in order that its readers may be kept informed of the progress of the work of construction at the great establishment. Since its last report an immense amount of work has been done. The two immense steel smokestacks are completed and the scaffoldings removed from the interior. The steel framework of the boiler-house has been finished by the Risdon Iron Works and the brick work has been almost completed as far as the eaves. The immense furnaces under the forty-eight large boilers are being rapidly bricked and the work will soon be commenced on finishing the roof.

In the storeroom are huge racks filled with rubber and iron washers, steel nuts, braces, bits and all sorts of spare tools. In one corner of this room a space has been enclosed and within it are sixteen draughtsmen busy all day drawing plans, etc., under the direction of Mr. Schierholtz.

The machine shop, blacksmith and carpenter shops show increased activity in the employes who are busy getting out material for the factory.

Reservoir.—Going across the river, the immense excavating work is still being carried on. Some 100,000 cubic feet of earth has already been removed. Contractor McMahon has a force of men who are busy with scrapers getting ready for the excavations for the immense reservoir. This will be lined with concrete and will have a capacity of 1,300,000 gallons. Recrossing the river several of the artesian wells are to be seen, the water coming to within a few inches of the surface in every one thus far sunk.

The Buildings.—The center of attraction, the main building, looms up in all its grandeur as the visitor approaches it. The north half, five stories high, is up. Twelve roof trusses are in place and there are thirty-eight crystallizers in position on the third floor. Seven of the immense vats for boiling the sugar will be hoisted to their place. This portion of the main building will have five floors and is 250 feet in length.

Adjoining this for 165 feet will be the machinery portion of the factory. There will be one floor only. Above the second story level it will be clear of obstruction to the roof. The south end will have three floors. It will be 170 feet long, making a grand total of 585 feet. In the center of the middle section workmen are busy building a large concrete foundation for the heaviest portion of the machinery. The entire section has bolt rods in place for the machinery.

Red hot Rivets.—The erection of the steel work by the Risdon Iron Works, under the superintendency of Mr. George Field, will necessitate the use of upwards of 500,000 rivets, all of which are driven red-hot. The rivet plant, which belongs to the Risdon Iron Works and was installed for handling this job alone, consists of a 60 H. P. boiler and one air compressor, which generates 300 cubic feet of air a minute. The men engaged in the work are upon the fifth floor, and some idea of the power of this plant can be had when it becomes known that each riveting tool and drill requires sixty cubic feet of air per minute. The air is compressed into a receiver through a pressure of upwards of 100 pounds to the square inch, and is then conveyed to the fifth story by means of a 2½ inch gas pipe. The steel frame will be finished inside of seventy days.

The Town.—Across the road from the factory grounds can be seen the forty cottages erected for Mr. Spreckels' workmen, every one of which has been let in advance. Carpenters, plasterers and painters are at work hurrying to finish the buildings before April 1st. There are twelve different styles of architecture to be seen in the houses and some sixteen colors. The town is laid out in streets and alleys. Fronting the Main or Railroad avenue is the large, three-story hotel with its seventy rooms. The second floor has rooms en suite, the third has single rooms. The plumbing work is roughed in and the building enclosed. The flooring not having arrived, delay is caused. The painting, however, has commenced under contract by Messrs. G. E. Hart & Co., formerly of San Jose. Lathing will soon be commenced. There will be a sewerage system for the town, the main pipe being twenty-four inches in diameter and the smallest pipe four inches. Every house will be lighted by electricity and will have sanitary plumbing. There have been several spaces staked off alongside the hotel for stores. It is expected that the town of Spreckels will be in full operation by the 1st of May at the latest.

THE HOME CIRCLE.

The Lighthouse.

'Neath a canopy of light,
Girt by foamy seas,
Stands the lighthouse, spectral, white,
Firm to every breeze.

Be the weather foul or fair,
Far its beacons show
To the world-rim billows where
Freighted sea-ships go.

And the pilots heed and sail
By its far-off gleam,
Till it glitters, small and pale,
Like a star a-beam.

So the Union towers white,
So its beacons shine,
So its stars illumine the night
With a gleam benign;

And the stately nations all,
Sailing fast and far,
See, beyond the sea-mists tall,
Freedom's guiding star.

—H. F. Thurston.

A Fellow's Mother.

"A fellow's mother," said Fred the wise,
With his rosy cheeks and his merry eyes,
"Knows what to do if a fellow gets hurt
A thump, or a bruise, or a fall in the dirt.

"A fellow's mother has bags and strings,
Rags and buttons and lots of things;
No matter how busy she is, she'll stop
To see how well you can spin your top.

"She does not care—not much, I mean—
If a fellow's face is not quite clean;
And if your trousers are torn at the knee,
She can put in a patch that you'd never see.

"A fellow's mother is never mad,
And only sorry if you're bad;
And I'll tell you this, if you're only true,
She'll always forgive you whatever you do.

"I'm sure of this," said Fred the wise,
With a manly look in his laughing eyes,
"I'll mind my mother every day;
A fellow's a baby that won't obey."

Ringgold's Pulley.

Sylvia was old enough to know that she ought to resist the fascination that was absorbing her best thoughts. She studied her lessons—all except her arithmetic, which she loved—in a reluctant sort of way and recited with a far-off look in her eyes. Sometimes that look came to her when she was talking with her girl friends and she would forget what she had said a moment before, call people by wrong names, return wrong answers to questions and act altogether so strangely that some girl would break out into a laugh, saying:

"Sylvia, I believe you are crazy."

This had happened more than once and it annoyed Sylvia so much that she had tried her best to be interested in fancy work and pretty gowns and hats and a dozen other things about which girls talk to each other.

She was in the habit of carrying to school a book that was not a school-book and sometimes she shyly looked at it when she thought no one was observing her. One day she was discovered—not by the teacher, but by Mary Bell, who thought the matter so singular that she called out at recess:

"Oh, girls! What do you suppose I saw Sylvia Ringgold reading in school? A dry old book about mechanics and that kind of thing. I was sure it was a good story and was going to ask her to lend it to me when I got a look at the title and saw the wheels and the diagrams and things."

After this everybody said that Sylvia was "queer," but many of the girls liked her in spite of that, for she was uniformly kind and obliging.

The one relative who interested herself particularly in Sylvia's peculiarities was her Aunt Hester. This lady did not like them and every now and then she told Sylvia's mother that something must surely be wrong with the girl. Mrs. Ringgold was inclined to make light of the matter.

"You are mistaken, Hester," she would say to her sister, "there is nothing the matter with Sylvia. She is just like other girls, except, perhaps, a trifle more studious."

"Is she studying her lessons all the time when she's alone up in the garret?" Aunt Hester once asked.

"Very likely she is, or perhaps reading a story. Sylvia wouldn't do any-

thing wrong. She is always so good and quiet."

If Sylvia had been a boy, her strange reserve would have been readily understood by her family, and she would never have been permitted to remain so long undisturbed in the garret. But how could they suspect that a girl would be afflicted with the family craze for inventing something? This passion for studying mechanical devices had survived through three generations of Ringgolds, and it had cost them a great deal of money and much sorrow and disappointment.

She knew the family story. Many a time she had heard about Grandfather Ringgold's pulley, which had never been completed. Then, there was her Uncle Alexander, who repeated her grandfather's failure, spending money, but gaining nothing, and finally there was her Cousin Dick, whom half the people in town called Crazy Dick Ringgold, because he walked the streets trying to interest rich men in his impracticable patents.

The women of the Ringgold connection, one and all, had a horror of patents because they had suffered so many deprivations from the failures and losses incident to them. No one knew these things better than Sylvia. That is why she guarded her secret, that is why she felt so guilty when anyone asked her why she acted so strangely.

How could she tell her mother or her Aunt Hester, or her father, or anyone that her mind was on fire with the spirit of invention, and she was trying now to solve the mystery of grandfather's pulley?

But the day of discovery was at hand. It was house-cleaning time and Aunt Hester, while in the garret, came upon a remarkable mechanical contrivance of springs and wires and cords and bits of wood and brass and steel. She did not have to look twice to know what it meant. She gave vent to her feelings by a little scream of surprise and dismay which brought Mrs. Ringgold running up from the story below.

"Oh, sister," cried Aunt Hester, tragically, pointing to the young girl's model. "Look! Sylvia has the fatal fever in her blood—the curse of the Ringgolds."

Mrs. Ringgold was quiet, though it was plain that she was vexed. She looked the contrivance over and then, covering it up, said sadly:

"Poor Sylvia!"

After a while Sylvia came in from school. She knew in a minute that something had disturbed the family serenity, and intuitively guessed what it was—her model had been found.

By the way the Ringgolds talked an outsider might have supposed that Sylvia had done something really wicked or had contracted a dangerous disease. She even fell into this mood herself and cried a little, but her father tried to comfort her.

"Never mind, Sylvia," he said, "we are going to let you make a visit to Uncle Jerold's. When you get out there, you'll forget all about this nonsense. Girls can't invent, and they shouldn't try it, especially when the men of the family fail."

"I'll try not to think of it," said Sylvia.

The next day she was taken out to the country to see what a change of scene would do for her. Uncle Jerold lived on a small farm that had formerly been a part of Grandfather Ringgold's estate. Sylvia had never visited them before and she found everything very interesting. Her aunt took her out for a long ramble through the woods and the two gathered autumn leaves and lichens and bunches of bright red berries. In a secluded corner of the wood Sylvia noticed a tall iron construction which she thought resembled the observatory in the park at home, and she asked what it was.

"Oh," said Aunt Rebecca, with a little sigh, "that is your poor grandfather's derrick. He had it erected that he might experiment with his pulley. Dear me! If your grandfather had let inventing alone, we might all be rich!"

You see, Aunt Rebecca knew nothing of the young girl's infatuation.

Sylvia tried very hard to keep her thoughts off the forbidden subject, but this was not easy with the top of grandfather's pulley in full view from her window. Evidently her father had forgotten that this old reminder of their broken fortunes had never been taken down, or he would have sent Sylvia somewhere else for a change of scene.

"I must examine it," the girl said to herself one afternoon, and she went out by herself into the woods and looked at the derrick. It was just as her grandfather had left it years ago. There was an open box supported by four chains attached to a lever, which was intended to be lifted by a spring, but the lifting had never been accomplished because grandfather's pulley would not work.

Sylvia lingered at the spot, thinking and comparing what she saw with what she had read. Why did not the spring work? She went out to look at it the next day and the next.

"Sylvia is a queer girl," said Aunt Rebecca to Uncle Jerold. "She cares more for that crazy old derrick of your father's than she does for making silk patchwork."

"If she were a boy I'd say she had the Ringgold mania," said Uncle Jerold.

One afternoon Sylvia was engaged at her fascinating occupation out in the woods. She had made a clearing around the derrick, adjusted the machinery and supplied some pieces that were missing. She had stepped into the lifting box and, happening to pull a hanging wire cord above her head, she found herself suddenly hoisted.

"Oh," she cried, "I've found it! I've found it!"

Up and up the box went, the old rope creaking and scales of rust from the chain falling thick on Sylvia's head. She was so happy that she had no thought of fear. Up and up she was carried till she stepped out of the little car on to the top floor of the derrick, and here, up in the air, Sylvia stood for five or ten glorious minutes, saying to herself:

"I have completed grandfather's invention!"

Yes, the Ringgold pulley was now a reality. Sylvia knew the secret that her grandfather had searched for in vain. The reward had come sooner than she expected and her happiness was almost overwhelming.

"Father will be proud of me now," she thought, "and mother will laugh and Aunt Hester won't scold." And Sylvia herself laughed a little bit triumphantly as she stood on the high structure, with the tops of the trees nodding at her.

Presently she heard Aunt Rebecca's voice calling from the world below:

"Sylvia, where are you? Supper's ready!"

"I'm here," said Sylvia.

When Aunt Rebecca and Uncle Jerold saw her up on the top of the derrick, waving her handkerchief, the sight filled them with consternation and almost took away their breath and when she said, speaking down from her elevation, "I've found out what was the matter with grandfather's pulley," they thought she had lost her mind. But they soon learned the truth.

Her descent was not accomplished quite so easily, for some of the machinery was defective from long exposure to the weather. But with Uncle Jerold's help she managed to get down in safety.

The feelings of the other Ringgolds when they learned of Sylvia's discovery were so exuberant that it would seem like exaggeration to try to describe them. To think that the lost fortune was to be won back by quiet little Sylvia!

In due course of time the Ringgold pulley was patented, but only a few that saw it in operation several years ago, at a great world's fair, knew that a girl of fourteen had perfected the invention.—Philadelphia Times.

Curious Facts.

The wearing of orange blossoms as a bridal decoration originated in the days of the Crusaders.

The fastest flowing river in the world is the Sutley in British India. Its descent is 12,000 feet in 180 miles.

Dr. Baketel says that sweet-pea flowers in a room will drive out and keep out flies. This is said to be an old remedy, but it is well to try it.

There is an immense garden in China that embraces an area of 50,000 square miles. It is all meadow land, and is filled with lakes, ponds and canals.

The record of the greatest number of notes struck by a musician in twelve hours is said to have been made by Paderewski, who struck 1,030,300 notes.

French Guiana is said to have the most violent thunderstorms in the world. The thunder is almost deafening, and the peals come in quick succession.

Texas contains 265,780 square miles. Europe, exclusive of Russia and the British Isles, contains 1,488,965 square miles. Sweden and Norway alone contain a larger area than Texas.

Laura—When Bob proposed last night did you know what was coming? Lucretia—No; I didn't know papa was within hearing distance; neither did Bob. Poor Bob!—Yonkers Statesman.

Young Lady—How old would you take me to be, baron? The Baron (bowing)—Ah, mademoiselle, how can I say? For your accomplishments tell me what your looks deny.—Truth.

A DOCTOR'S DIRECTIONS.

They save a daughter from blindness.

When a father writes that yours "is the best medicine in the world," you can allow something for seeming extravagance in the statement if you know that the medicine so praised, cured a loved daughter of disease and restored to her the eyesight nearly lost. The best medicine in the world for you is the medicine that cures you. There can't be anything better. No medicine can do more than cure. That is why John S. Goode, of Orrick, Mo., writes in these strong terms:

"Dr. Ayer's Sarsaparilla is the best medicine in the world. My daughter had a relapse after the measles, due to taking cold. She was nearly blind, and was obliged to remain in a dark room all the time. The doctors could give her no relief; one of them directed me to give her Ayer's Sarsaparilla. Two bottles cured her completely."

The thousands of testimonials to the value of Dr. Ayer's Sarsaparilla repeat over and over again, in one form or another the expression: "The doctors gave her no relief; one of them directed me to give her Dr. Ayer's Sarsaparilla. Two bottles completely cured her."

It is a common experience to try Dr. Ayer's Sarsaparilla as a last resort. It is

a common experience to have Dr. Ayer's Sarsaparilla prescribed by a physician. It is a common experience to see a "complete cure" follow the use of a few bottles of this great blood purifying medicine.

Because it is a specific for all forms of blood disease. If a disease has its origin in bad or impure blood, Dr. Ayer's Sarsaparilla, acting directly on the blood, removing its impurities and giving to it vitalizing energy, will promptly eradicate the disease.

The great feature of Dr. Ayer's Sarsaparilla is the radical cures that result from its use. Many medicines only suppress disease—they push the pimples down under the skin, they paint the complexion with subtle arsenical compounds, but the disease rages in the veins like a pent-up fire, and some day breaks out in a volcanic eruption that eats up the body. Ayer's Sarsaparilla goes to the root. It makes the fountain clean and the waters are clean. It makes the root good and the fruit is good. It gives Nature the elements she needs to build up the broken down constitution—not to brace it up with stimulants or patch it up on the surface. Send for Dr. Ayer's Curebook, and learn more about the cures effected by this remedy. It's sent free, on request, by the J. C. Ayer Co., Lowell, Mass.

Fashion Notes.

All the shades of purple, mauve, violet, pansy, wistaria and hyacinth are in marked favor.

High satin collars finished with standing lace fraises, elaborate Queen Anne ruffles, detachable blouse, or flat vest fronts, long Directoire scarfs with fluted ribbon-bordered ends, and exceedingly dainty French-looking berthas and Marie Antoinette fichus are all reproduced among the charming et ceteras in dress for next season.

French mohair retains all its acquired popularity for certain uses in the world of fashion, and among other spring materials are found some novel and pretty varieties in serge, armure, basket, trellis and whipcord weaves in many stylish patterns, and also in every handsome colorings.

The most popular colors for the coming season are the porcelain, hyacinth, turquoise, cadet and sapphire blues, all the pretty shades of gray and beige, Russian and emerald greens and violet to be used chiefly for a contrast in trimming. Yellow in all the tints from cream to deep orange will be worn, and also the pretty deep rose pink. Light fawns, grays, browns and beiges are especially in favor just now for the new cloth gowns made for early spring wear. And so is a blue and gray mixture which is useful in all kinds of weather.

Something very pretty for summer dresses is the boxed dress patterns of white applique lawn. This is predestined to take the place entirely of the once well-loved brown batiste and the white embroidered lawn. The applique is edged all about with a fine line of black needlework, and a white organdie, flowered over with pale lavender and deep purple iris blossoms, set in a delicate black framework, is a delectable sight to beauty-loving eyes. Another pretty thing, called Javanaise, is a cotton goods, soft and fine as the batiste used for French lingerie, striped in satin lines and flowered like the tea-cups and cake plates of our grandmothers.

Some of the new French zephyr gingham are shown in immense block patterns in cream and pink, ivory white and dresden blue, purple and pale lilac, brown and fawn color, etc., and many of the designs have wide borders in the same color blendings as the plaid, but with more closely-set crossing lines. Spread out in their various fancy effects, they look like an array of huge bandana kerchiefs.

Black poppies, roses and violets are the prevailing blossoms in the new spring hats.

The new spring coats are very jaunty, and varied enough in style to suit every figure. They are close fitting in the back with loose box fronts, or open with revers turning back, which are of satin covered closely with braid in straight rows. There are strapped seams and plain seams and coats with belts, and the prettiest linings are of liberty satin.

The latest novelty in feather boas has six ends, three on each side, and fastens at the neck with a jewelled ornament, which in general is set with rhinestones.

All sorts of ruffling for trimming summer gowns and evening dresses can be bought in the shops all ready for use. It comes in Liberty gauze, chiffon and lace, all finished on the edge with rows of narrow gathered satin ribbon, a little ruche of chiffon, a tiny border of flowers or frills of narrow lace.

Belts of plaid leather, with plaid leather shopping bags to match, are

seen in the large stores, and bid fair to gain popularity. The favorite colors in the plaids are red, green, blue and yellow, and the leather is generally alligator or calfskin, cape goat, don-gola and seal. They are stylish and durable, and their reasonable price puts them within reach of all.

Jewelled buttons are seen on hand-some gowns of silk and velvet. Turquoise, rubies, emeralds and topazes are the jewels most in use. The buttons are of medium size and are really works of art.

Plain Irish flax materials are brought out in blue, pink, tan, ecru, brown, etc., and models are fashioned into Jacket costumes, having strapped seams and tiny buttons, in ture tailor style. A suit of one color will be worn with a vest of another, as brown or gray with pink, cream with blue, and so on. For genuine hot weather, these fabrics are cooler and more comfortable wear than the heavier linens and ducks.

Black poppies, violets, roses, and other flowers, black lace, jet, tulle, net and feather tips are used on delicately colored straws in pink ecru, heliotrope, green, and gray.

In dress goods browns will, it is expected, be much worn. The shades range from bright tobacco to castor and the slightly grayish tea colors. There are also bright golden tints and those with a strong hint of pink. A brown cloth gown of light weight, with touches of yellow or pale rose at the throat and in the hat would be a safe purchase for those contemplating a Southern trip. Cloth is coming more and more to the front. Black is also in immense favor, and black cloth skirts, it is predicted by those who know, take the place of the black satin and brocade skirts, with separate waists, last season. As mentioned above, gray, blue and lilac, also a pale green, will be favorites.

Something very dainty in a summer skirt-waist is made of white organdie, finely tucked and embroidered, and worn over a pale blue underslip of China silk or batiste.

Gems of Thought.

Earth's noblest thing, a woman perfected.—Lowell.

There is a woman at the beginning of all great things.—Lamartine.

God makes and the world educates, but 'tis woman that finishes a man.

A woman dies twice; the day that she quits life and the day that she ceases to please.—Jean Jacques Weiss.

There are many persons who think Sunday is a sponge with which to wipe out the sins of the week.—Beecher.

We owe many valuable observations to people who are not very acute or profound, and who say the thing without effort which we want and have long been hunting in vain.—Emerson.

There is a Sunday conscience as well as a Sunday coat, and those who make religion a secondary concern put the coat and conscience carefully by to put on only once a week.—Dickens.

Lover, daughter, sister, wife, mother, grandmother; in those six words lie what the human heart contains of the sweetest, the most ecstatic, the most sacred, the purest and the most ineffable.—Massias.

We are never more discontented with others than when we are discontented with ourselves. The consciousness of wrong doing makes us irritable; and our heart in its cunning quarrels with what is outside it, in order that it may deafen the clamor within.—Amiel's Journal.

It is true that other people may see as well as a painter, but not with such eyes. A man is taught to see as well as to dance; and the beauties of nature open themselves to our sight by little and little, after a long practice in the art of seeing. A judicious, well-instructed eye sees a wonderful beauty in the shapes and colors of the commonest things, and what are comparatively inconsiderable.—Jonathan Richardson.

DOMESTIC ECONOMY.

Domestic Hints.

STEAK SAUCE.—Chop finely two green peppers, two fresh tomatoes, two onions. Let them simmer in a frying-pan in butter, then throw it over steak, after it has been cooked and seasoned.

HOME-MADE NOODLES FOR SOUP.—Beat up one egg light, add a pinch of salt, one-half gill water; beat well. Sift in as much flour as can be worked in with a spoon, then sift in more flour with hand, stiff enough to roll, but be careful not to use too much. When rolled out, leave it to dry, after which roll it up and shave.

EGGLESS FRUIT PUDDING.—One heaping cupful of bread crumbs, two cupfuls of flour, one cupful of finely chopped suet, one cupful of seeded raisins, one cupful of molasses, one cupful of sweet milk, one-half of a teaspoonful of salt, one teaspoonful of soda dissolved in a little hot water, one-half of a teaspoonful of cloves, one teaspoonful of cinnamon. Steam for four hours and serve with hard or soft sauce.

CREAM SAUCE.—Into a saucepan put three level tablespoonfuls of butter and four level tablespoonfuls of flour, one scant teaspoonful of salt and one-third of a teaspoonful of paprika. Set over the fire until melted and mixed, add gradually one pint of hot cream or rich milk, stirring until smooth and thick. Simmer for five minutes, add one teaspoonful of lemon juice and serve. The paprika will give a delicate tinge of red to the sauce; the coral of the lobster, if there is any, may be rubbed smooth with the butter for the same purpose.

SUNSHINE CAKE.—Beat the yolks of four eggs until very thick and light; add to them gradually, beating all the while, one and one-half cupfuls of powdered sugar. Whip the whites of eleven eggs to a stiff, dry froth; add a part of them to the eggs and sugar. Stir in lightly one cupful of pastry flour, measured after it has been sifted five times, and in which has been stirred one teaspoonful of cream of tartar; then cut in the remainder of the whites. Add one teaspoonful of vanilla, turn into an ungreased mould and bake for forty-five minutes in a moderate oven.

JOHNNY CAKE.—One quart of milk, two well-beaten eggs, butter and lard each the size of an egg, one tablespoonful of brown sugar, one teaspoonful of soda, two tablespoonfuls of flour, sufficient Indian meal to make a thick drop batter. Melt the butter, mix all the ingredients except the soda together, and beat hard for ten minutes. Add the soda dissolved in a tablespoonful of hot water; beat for a moment longer, pour into a buttered pan of such size that the cake will be not much more than an inch thick, and bake slowly in a moderate oven. Serve hot, breaking it into squares.

WHITE BROTH OF FOWLS, CHICKEN BROTH.—Take two or more old hens or fowls, or their carcasses, after the fillets are abstracted for other purposes; skin them, cut them in pieces, and put them in a stock pot, either with water and one ounce of four seeds (equal parts of aniseed, caraway, cumen and fennel) in a bag, or standard beef broth; if you omit the four seeds, put in celery, onions, turnips, carrots and leeks; boil for two hours; if you have old hens to deal with, boil them for three hours. Skim, pass through a napkin and use. This broth, erroneously called consomme by some writers, properly called bouillon by Beauvillers, is very useful for imparting a delicate flavor to clear soups. When purity of chicken flavor is not

required, the fowls or their carcasses may be boiled in standard broth instead of water. This leaves any meat of the fowls fit for further use.

Hints to Housekeepers.

An excellent way to mend large holes in stockings is to tack a piece of net over the hole and darn through it. This also is applicable to merino underwear.

If you have corks too large for the mouths of the bottles, soak them in boiling water for a short time. This will generally soften them so that they may easily be pressed into the bottles.

Bits of iron will prevent water from becoming putrid. Sheet iron or iron trimmings are the best. The offensive smell of water in vases of flowers would be avoided by putting a few small nails in the bottom of the vases.

Clothespins need washing occasionally to keep them at their best. A good plan is to drop them in the boiler after the clothes have been taken up, then pour the water off, rinse the pins and dry thoroughly before putting away.

Salt preserves the teeth, keeping them white, the gums healthy, and the breath sweet. Put some in an iron shovel, place it over the fire, and when quite hot pour into a thin bag. Apply to any part affected with neuralgia or intense pain.

Clothes lines should always be taken down after the weekly wash if possible, rolled up and placed in a bag until next time. If the line is a pulley or a wire line and up to stay, wipe off carefully with a damp cloth each time before using.

The laundress is, of course, to blame for scorch or mildew. It is said that when linens are badly scorched the spot can be removed if treated in the following manner: Extract the juice from two peeled onions, and put it into an agate or granite vessel. Add to it half an ounce of white castile soap, cut into small pieces, and two ounces of fuller's earth. Mix them together, and then stir in one cup of vinegar. Stand the vessel over the fire, and let its contents thoroughly boil. When the mixture has become cool, spread it over the scorched linen, and let it dry upon the cloth. When well dried wash out the linen.

The importance of the footrest is not widely understood, nor is it sufficiently dwelt upon even by the advocates of various sorts of rest cures. Every woman should know that it is essential to her physical well being that she have a footstool as well as a chair; that a reclining chair, because it removes the weight of the body entirely from the feet, is more restful than even the very American institution, a "rocker," and that in every kitchen a high office stool should form part of the furniture. The maids should be encouraged to sit, so far as it is possible, at their work. The stool gives support to the feet by its rounds.

Chicken broth for an invalid should be prepared very carefully. Draw and singe a good-sized chicken, being sure it is quite fresh and has not been kept in cold storage. Disjoint the chicken, remove the fat and the skin. Put the chicken in a stewpan with as much water as will cover it to the depth of an inch. Stand the stewpan in a large pan of hot water over the fire, and let the water in the lower pan boil briskly for two hours, then take out the inner pan and let it stand a few moments; then strain the broth through a very fine sieve. Before serving it season with a little salt. Do not add rice or anything else to the broth without directions from the physician.

Two or three customers can compel any dealer to keep Macbeth's lamp-chimneys.

Does he want your chimneys to break?

Get the Index.

Write Macbeth Pittsburgh Pa

Gives Perfect Satisfaction.

Granite State Evaporator Co. Sweetser, Ind., June 14, 1897.
Gentlemen:—The Granite State Feed Cooker and Water Heater which I purchased of you some time ago is giving perfect satisfaction. Very little fuel is required and a large amount of heat is produced. Every stock-raiser should own one. In my opinion, it is the best made.
Yours truly,
ROBERT SHERON.

25 gallon, \$12; 50 gallon, \$17; 100 gallon, \$24.

GRANITE STATE EVAPORATOR CO., 6 Temple Court, N.Y. City



TRACK AND FARM.

The Horse Outlook.

All authorities seem to agree that those who have good horses in the near future will find them in demand. We have published much to this same effect, but it is a most interesting matter from a breeder's point of view and discussion is hardly likely to be counted dull.

Horses Are Scarce.—From present indications there will soon be a material advance in the price of horses, especially the better grades. Even now good horses are by no means plentiful. But this is a trifle to what the scarcity will be in the future; for the market is only just commencing to feel the effect of farmers having almost ceased to breed since the era of low prices began. Owners of stud horses in every section of the country have the same tale to tell. For the last three or four years their business has fallen off to such a degree, says the *Horseman*, that most of them are on the verge of ruin, and many have abandoned the business, utilizing their stock for some other purpose. The surplus caused by overproduction during the prosperous days of breeding is not yet entirely exhausted, but the past season, though there were plenty of five-year-olds and upward to be found, younger animals were scarce. Next season, therefore, there will be very few five-year-olds, which are the most desirable animals for the city market and the export trade, and each season hereafter they will become scarcer.

Horses Distance Wheels.—It is true that the use of electricity for traction purposes has lessened the demand for horses, but only for those of a certain class. The almost universal use of the bicycle has also decreased the demand for saddlers and drivers. But a good many people who abandoned the buggy for the wheel have discovered that the use of the latter entails a good deal of labor, while the saving in expense is not large. The most important factor, however, in destroying the home demand for the better class of horses was the hard times that have prevailed the country over. There is now every indication of an improvement in this respect, so thousands who, in order to retrench, had to forego the pleasure of riding or driving, will soon once more be able to afford this enjoyable and health-giving pastime. When first railroads were introduced in England, the calamity howlers predicted that the reign of the horse was over. On the contrary, horses became in better demand than ever. Electric traction will have the same effect here in time, for rapid transit is distributing the urban population among the suburbs, where horses can be kept more cheaply than in the heart of the city, and where horseback riding and driving are more enjoyable.

The Export Outlet.—There is another encouraging fact for horse raisers. The low prices that have prevailed for the last four years have enabled our dealers to build up an enormous export trade. During this period the number of horses sent across the Atlantic has annually shown a large increase. So when the full returns for the past season come in, they will doubtless show that the number exported exceeds 40,000. A considerable rise in price will not, as some may argue, destroy this export trade, provided the class of horse it demands is forthcoming. Several steamship lines have equipped their boats with special reference to this trade. This has resulted in their having very materially cheapened the cost of transport. Sooner than let the business die, they will make farther reductions. The railroads running east from the horse-raising districts will also make every effort to sustain it. The buyers on the other side, who have learned to look to this country for their supply, will not hesitate to pay a few dollars more rather than seek it from other sources. Half a dozen extensive establishments devoted to handling American horses are now in opera-

tion in London alone, while there are several more in Glasgow and other provincial towns. The owners of these will not abandon their trade without a struggle. The lower grade of export horses bring in England from \$150 to \$200 a head. This is about double the first cost of the animals here. Roughly estimating the various profits and expenses at \$100 a head, strict economy would permit a cut of 15 per cent on this without hampering the trade. A rise of 10 per cent in values on the other side would not materially lessen the demand from the foreign users. These two items give a margin of from \$30 to \$35 a head, all of which could be added to the value in the home market. In other words, the horse that now brings \$50 in the Chicago yards could bring \$80, and the one that sells for \$100 could be sold for \$135, before the export demand would show any signs of falling off. Nor would this be the limit, for buyers on the other side would gradually accustom themselves to a steady rise, especially as a 10 per cent increase in value on this side would not mean much more than 5 per cent there.

A New Irish Question.—There is also a good demand in England for higher grade horses than those mentioned above, but the outlook for this branch of the trade is not so satisfactory. During the past year a commission appointed by the House of Commons has been investigating the depression in the horse raising industry both in England and Ireland, but especially in the latter country. Among other recommendations the members of this commission will urge when Parliament reassembles in February is that all imported horses shall be branded on the neck by inspectors at the port of entry. As the present majority in the House is made up largely of country squires, whose incomes have been much curtailed by American competition in agricultural products, it is not unlikely this suggestion will meet with favor. In this case the trade in high class saddlers and carriage horses must undoubtedly suffer, for most of the best ones lose their identity as soon as they leave the ship, being sold to better advantage when described as English or Irish bred, while even those buyers who are satisfied to take an American bred one would hesitate to do so if he was carrying a disfiguring brand. This, however, will cut no figure with the trade in busses and vanners, for their purchasers care little where the animals come from as long as they can do the work, which the American bred ones have amply proved they can.

The Time to Begin.—The foregoing should encourage those farmers who have suitable mares to once more engage in the horse raising industry. Those who start first are sure to reap the greater profits. It will necessarily

\$100 Reward.

For many years we have advertised this reward for any case that Tuttle's



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| 1892, | Madison, Wis., | LOUIS BRAHE, | Washington, Iowa, | Score 98 |
| 1893, | Dubuque, Iowa, | C. W. SMITH, | Colvin's Park, Ill., | " 97 |
| 1895, | Rockford, Ill., | F. C. OLTROGGE, | Tripoli, Iowa, | " 98 |
| 1896, | Cedar Rapids, Iowa, | THOS. MILTON, | St. Paul, Minn., | " 97.82 |
| 1897, | Owatonna, Minn., | H. N. MILLER, | Randall, Iowa, | " 98.5 |
| 1898, | Topeka, Kas., | SAML. HAUGDAHL, | New Sweden, Minn., | " 98 |

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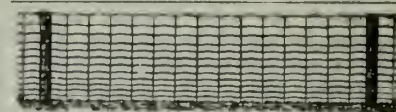
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take many years to bring the horse supply once more up to the normal point, so it is safe to predict that the produce of the mares bred the coming season will bring prices that will be more than satisfactory to their owners, if suitable mates are selected for them. It is those who make an early start that will reap the benefit of a bare market, for rising prices next season, and higher ones two years hence, will send every farmer into the business again, with a probability that an over-supply will once more be produced, unless more care in breeding is exercised in the future than has been the case in the past. There is one good effect the depression of late years should have had. Those farmers who have been haphazard, using the cheapest sires, must have noticed that those few of their neighbors who selected some animal specially suited for each mare were selling at living prices, while their youngsters failed to bring enough, after deducting the cheap covering fee, to pay for the keep of the mares while carrying them. This should teach them that too much care can never be exercised in selecting both sire and dam. If they have laid this lesson to heart, the misfortunes they have gone through may prove a blessing in disguise. In future the demand will be for the best individuals obtainable in the various classes.

The Best Are Wanted.—Such animals, for many years at least, can be sold at a good profit, but they can only be produced by careful mating. The Boards of Agriculture of those States where horse raising has been largely carried on in the past, have now a splendid opportunity to confer lasting benefits on the farmers. The number of stud horses within their jurisdictions have been reduced to a minimum. Probably few but the fittest have survived. When those who formerly kept them begin to stock up again, which they undoubtedly will do when a demand for their services arises, they should either be encouraged to buy none but the best, or a liberal annual subsidy from the State for each horse granted a certificate of perfect fitness by the Board, or they should be compelled to do so, by legislation forbidding any horse to be used for covering purposes, unless such a certificate was granted him. By this means the average class of all the horses raised would be vastly improved, which would increase the export demand and stimulate the home one. I have been for the past month traveling through the State of Wisconsin and find only a few

five-year-olds and still fewer younger horses. In short, the country is so bare of horses that some of the exporters are not able to fill their weekly contracts. Moreover, some of them are scouring the country in order to get what they want, and to my personal knowledge are not finding enough even of a grade slightly inferior to that which they desire to buy.

"BROWN'S BRONCHIAL TROCHES" will quickly relieve Bronchitis, Asthma, Catarrh and Throat Diseases. Sold only in boxes.



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\$50 IN A LUMP



That is just about the amount of money the shrewd horse buyer wants to knock off the price of a good horse for one small lump on the leg. Why not take off the lump and get the extra money?

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OINTMENT

will remove all lumps and bunches permanently without leaving a scar. For sale at all drug stores at \$1.00 pkg. Smaller size 50c.

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50% STRONGER and cost no more than old style

Corrugated Steel Hinges.



They do not break, as they cannot bind on the pin. Good looking too. Ask for them at your dealer's. Send for circular. Made only by THE STANLEY WORKS, New Britain, Conn.



BARGAINS IN BICYCLES

NEW AND SECOND-HAND

FROM \$20 UP

Send for List. Hooker & Co., San Francisco

Popular Science.

Humboldt said that a single pound of the finest spider webs would reach around the world.

One inch of rain falling upon one square mile is equivalent to about 17,500,000 gallons of water.

English is spoken by only 125,000,000 persons, while it is estimated that Chinese is spoken by 400,000,000.

Since the beginning of the nineteenth century the number of English-speaking people has grown from 25,000,000 to 125,000,000.

A dog has in his upper jaw six incisors, two canines and six molars on each side; in the lower, six incisors, two canines and seven molars on each side.

The beautiful and delicate colors observed on the eggs of birds are not very fast to light, more especially when they belong to the lighter class of color.

If the land surface of the globe were divided and allotted in equal shares to each of its human inhabitants, it would be found that each would get a plot of 23½ acres, but much of it would not be worth having.

A Cornell professor makes an interesting announcement about brains. The main portion of the human brain is composed of the cerebrum, and the portion anterior to it, devoted to smell, and known as the olfactory bulbs, is sometimes treated as a mere appendix to the cerebrum. But this professor, after comparing brains from all grades of the lower animals, declares that the human brain is an anatomical monstrosity, and that, in a historical view of the brain, the portion devoted to thinking is more properly to be styled a mere appendix to the part devoted to smelling. In some creatures, the olfactory portion is much the largest part of the brain.

At the latest meeting of the American Chemical Society a half gallon of liquid air was ladled out of a covered receptacle packed in several thicknesses of felt, much as if it had been ordinary ice water, but on pouring it into any glass, porcelain or iron vessel it boiled with great violence until the container cooled to the temperature of the intensely cold liquid, which means about -310° F. Drops falling on the lecture table immediately took the spheroidal form and ran about exactly as drops of water on a hot stove. Placed in a glass beaker the liquid first boiled, then became clouded with a crystalline precipitate of carbon dioxide, which was present as an impurity, and from which it was separated by filtration through an ordinary paper filter, and the clear liquid was caught in a double-walled glass cylinder. The space between the walls, having been exhausted to produce a vacuum, the clear, slightly blue liquid air remained in the tube over an hour before complete evaporation. Among other experiments, alcohol was quickly frozen, rubber tubing was hardened by the low temperature so as to break when struck by a hammer almost like glass, and a piece of thin sheet iron, after immersion in the cold liquid, became very brittle.

First Passenger (irritably)—Where are your eyes? Celtic Passenger (pleasantly)—In me head. First Passenger (warming up)—Well, can't you see my feet? Celtic Passenger (more pleasantly)—No, ye have shoes on.—London Judy.

How's This?

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.
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We, the undersigned, have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligations made by their firm.
WEST & TRAU, Wholesale Druggists, Toledo, O.
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Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price 75c per bottle. Sold by all Drug gists. Testimonials free.
Hall's Family Pills are the best.

Coast Industrial Notes.

—Equally with gold and copper, warships are in greatest present demand.

—The Pacific Coast will get no river and harbor appropriations at this session of Congress, that entire matter going over till next December.

—Fascines will be used on the San Francisco and S. J. V. R. R. in crossing the tule lands near Stockton. Work on the 6000-foot Rodeo tunnel to Port Richmond, Cal., has begun.

—It is stated here on good authority that the Union Pacific is now in control of the Oregon Short Line. The Oregon Short Line carries with it control of the Oregon R. R. & Navigation Co.

—An effort is being made to amend the naval appropriation bill, appropriating \$25,000 for making soundings for a cable line from the Hawaiian islands to Japan and also to Australia.

—The Oceanic Steamship Co.'s steamer Alameda, now on her way from Australia to San Francisco, has on board \$3,500,000 in gold. This is the largest amount of treasure ever brought into this port by a single vessel.

—The Oregon and Washington wheat crop of 1897 was 35,000,000 bushels. Of this 21,000,000 bushels have been shipped from Portland and Puget Sound. Detailed shipments for the season commencing July 1st, '97, to March 1st, '98, aggregate: From Portland, 13,178,600 bushels; from Puget Sound, 7,973,762 bushels.

Woman's Drawback.

BUSINESS MEN CANNOT DEPEND ON WOMEN FOR HELP.

They are Ill Too Often Because Negligent of Their Health—A Business Woman's Telling Words.

From the Free Press, Detroit, Mich.

The greatest drawback to-day with women that work in the stores and factories is, that they do not take the right care of their health. Business men frequently say they can't depend on women because they are ill too often. If every young woman would take the right care of herself this complaint would never be heard.

Many thousands of young women are working, suffering agonies that would force a man to a sick bed. They bear their tortures in silence because of their inborn modesty and blame their mother for not advising them.

Mrs. C. W. Mansfield, of 58 Farrar Street, Detroit, Mich., is a business woman, and a successful one too. Employing many young women and having years of experience in the business world she is in position to speak of women who earn a livelihood.

"For years," she says, "I suffered in silence and was so worn out at night that I could not sleep. I visited a female specialist who said I had a complication of ailments peculiar to women. I could not find relief from her remedies and had tried so many kinds of medicine that I had given up all hope of ever getting better.

"I was given a box of Dr. Williams' Pink Pills for Pale People, by a young lady in my employ. The first box gave me much relief and I was able to rest at night for the first time in many months.

"I then bought more pills and think I must have used a dozen boxes in my own case, but have given away to suffering women double that amount. Without a doubt these pills are a good medicine for they cured me, and have cured several people to my knowledge.

"I think that if you should ask any of the druggists of Detroit, who are the best buyers of Dr. Williams' Pink Pills for Pale People, they would say the young women.

"These pills certainly build up the nervous system and many a young woman owes her life to them.

"As a business woman I am pleased to recommend them as they did more for me than any physician and I can give Dr. Williams' Pink Pills for Pale People credit for my general good health to day."

No discovery of modern times has proved such a boon to women as Dr. Williams' Pink Pills for Pale People. Acting directly on the blood and nerves, invigorating the body, regulating the functions, they restore the strength and health to the exhausted woman when every effort of the physician proves unavailing.

For the growing girl they are of the utmost benefit, for the mother indispensable, for every woman invaluable.

Everywhere Dr. Williams' Pink Pills for Pale People are recognized as a specific for diseases of the blood and nerves. For paralysis, locomotor ataxia, and other diseases long supposed incurable, they have proved their efficacy in thousands of cases. They are one of the greatest blessings ever bestowed upon mankind.

Knocked out by Lumbago?

It's because you don't cure it with ST. JACOBS OIL, which penetrates to the seat of the pain and subdues, soothes, cures.

Don't Be Careless.

Don't guess what your cows are doing, but KNOW.
Don't think your cows are all right when you can KNOW.
Don't use an inaccurate Babcock Test.
Don't let your creamery man skin you; keep a check on him.
Send to us for a first-class ten-dollar

No-Tin Babcock Test

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Elgin Mfg. Co., Elgin, Ill.

The Jones Chain Mower.

UNLIKE GEARED MOWERS
IT HAS
NO NOISE! NO VIBRATION!
NO LOST POWER!
NO COG WHEELS TO WEAR OUT!
NO BACKING UP TO START IN THE GRASS.

THE JONES ALL STEEL HAY RAKE -- THE ONLY ADJUSTABLE HAY RAKE MADE.

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Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced first-class agency. We have able and trustworthy associates and agents in Washington and the capital cities of the principal nations of the world. In connection with our scientific and Patent Law Library, and record of original cases in our office, we have other advantages far beyond those which can be offered home inventors by other agencies. The information accumulated through long and careful practice before the Office, and the frequent examination of patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us to give advice which will save inventors the expense of applying for patents upon inventions which are not new. Circulars and advice sent free on receipt of postage. Address DEWEY, STRONG & CO., Patent Agents, 330 Market St., San Francisco, Cal.

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Unless you see the OUTFITS sold by the
Home Supply Co., 217-221 Drumm St., S. F.
They are outfitting a great many Klondikers—packing and shipping goods most satisfactorily. Their prices are very low for high-grade goods. Send for their Alaska Price List, Free.

Wheat \$1 a bushel. Use our Disc Seeder \$32. Disc Drill \$39. Sent on trial, until machine is tried you send no money. 2 styles, 5 sizes. We make the only Disc throwing earth all one way. From factory to farm; no middlemen; save ¼ to ½. Send for big cata. free, and price delivered at your station on buzzies, harness, scales, 1000 other things you want. Add. Hapgood Plow Co., Box 117 Alton, Ill. O. R. Gang \$35. Sulky Plows \$25.

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For all soils, all work.
Crushes, cuts, lifts, pulverizes, turns, levels the soil in one operation.
Cast steel and wrought iron—practically indestructible.
Cheapest riding harrow on earth. \$8.00 and up.

Illustration: A large agricultural machine with multiple rows of tines and a heavy frame.

Agents Wanted
Mention this paper.
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List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING MARCH 8, 1898.

600,214.—RAILROAD SIGNAL LIGHT—J. F. Bean, Martinez, Cal.
600,404.—BICYCLE—S. D. Carpenter, Spokane, Wash.
600,405.—SASH HINGE—C. J. Clarke, Oakland, Cal.
600,478.—HARNES LOOP—R. G. Cottier, Los Angeles, Cal.
600,215.—PAVEMENT FINISH—W. E. Dennison, S. F.
600,277.—ARC LAMP—L. H. Duncan, S. F.
600,281.—STEP LADDER—Chas. Garland, Grayson, Cal.
600,492.—BOTTLE—E. Gerlach, S. F.
600,198.—ROTARY NOZZLE—H. H. Gortor, S. F.
600,284.—CAR FENDER—W. H. Heywood, Gualala, Cal.
600,225.—SAWMILL CARRIAGE—W. B. Heywood, Berkeley, Cal.
600,424.—CORK PULLER—F. L. Johnson, Valley Springs, Cal.
600,371.—ROAD AND BICYCLE—W. J. May, Tillamook, Or.
600,158.—RATCHET WRENCH—R. J. Miller, Placerville, Cal.
600,231.—SEWING MACHINE—J. H. Mooney, Oakland, Cal.
600,290.—THERAPEUTIC ELECTRODE—J. S. Muir, S. F.
600,270.—AWNING—J. J. Price, San Jose, Cal.
600,379.—CIGAR BUNCHING MACHINE—J. J. Ryan, San Jose, Cal.
600,396.—STEAM BOILER—J. P. Simmons, S. F.
600,298.—GAS GENERATOR—A. J. Tackle, Oakland, Cal.
600,326.—PLUMB LEVEL—C. Warren, Rough and Ready, Cal.
600,464.—HOLDER AND TILTER FOR CANS, ETC.—Webster & Holgee, Los Angeles, Cal.
600,394.—FRUIT CLEANER—B. B. & J. H. Wright, Riverside, Cal.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s Scientific Press U. S. and Foreign Patent Agency, the following are worthy of special mention:

CIGAR BUNCHING MACHINE.—John J. Ryan, San Jose, Cal. No. 600,379. Dated March 8, 1898. This invention relates to improvements in machines which are employed for the bunching of tobacco and forming it in shape to eventually complete the cigar. The object is to rapidly roll scraps, short or long fillers, into the binder and deliver the scraps or leaves which constitute the filler perfectly straight and parallel with each other, preventing the same from twisting or forming knots or lumps and so that the cigar made therefrom will burn perfectly even for the entire length, the bunch being maintained in a perfectly porous condition from end to end so that the draft is easy and unobstructed. In the construction of bunching machines of this class but little attention has been paid to accuracy of adjustment, and experience has shown that with the utmost accuracy the operation of bunching the tobacco will produce more or less faulty cigars. In my invention I employ a convex table, a carriage having arms pivoted upon the same common center of curvature with the table and adapted to move backward and forward over the table. A roller is journaled on this carriage and a flexible apron is fixed at the ends of the table having an intermediate loose furrow adapted to receive the tobacco to be bunched and be acted upon by the roller when the carriage is moved over the table so that the bunch will be rolled and formed within the fold of the flexible apron. With this are means for holding the ends of the apron end adjusting it so that it always remains exactly in line with the line of travel of the carriage, and means for adjusting the apron and clamping or locking it at any point of adjustment. The bearing shaft, about which the arms of the carriage are turnable, has fitted to it a closed tubular sleeve extending from one arm to the other and forming a continuous closed journal-box, which prevents grit and dirt from obtaining access to and wearing it.

THERAPEUTIC ELECTRODE.—John S. Muir, San Francisco, Cal. No. 600,290. Dated March 8, 1898. This invention relates to a novel method of constructing therapeutic electrodes for the especial purpose of introducing medicinal and chemical substances into the tissues of the human body through the agency of electricity for therapeutical effects. It consists essentially of an electrode consisting of a hollow porous cell adapted to fit the tissues upon which it is to act, said cell being adapted to contain an electrolytic fluid and having an opening through which it may be charged. A conducting rod extends axially into the cell through the closed opposite end and projects through an insulated enclosing envelope having the projecting end split, and in combination with this is an insulated handle having an interior conducting cylindrical surface which is adapted to fit and grasp the split end of the rod so as to make an electrical connection between the two. An electrical conductor extends from this interior surface of the handle to the battery or generator. The exterior surface of the porous cell may also be coated with a non-conducting substance at certain portions, leaving only a part of the cell exposed, and it may thus be adapted to act upon any limited portion of the surface with which it contacts so that the action will only take place through the uncoated surface.

FOLDING STEP-LADDER.—Charles Garland, Grayson, Cal.; one-half interest assigned to J. M. Hammonds of same place. No. 600,281. Dated March 8, 1898. This invention relates to a novel construction of step-ladder which enables it to be easily extended or folded into small compass for storage when not in

use. It consists of centrally pivoted side bars crossing each other, having the ends also pivoted together in the form of what is known as "lazy-tongs." Between two pairs of these foldable sides extend the steps, which are fixed between each alternate pair of the side bars between the center and the end. Removably connected brace bars serve to hold the apparatus in its extended position, and when these bars have been detached the apparatus can be folded into very small compass. When it is extended its higher end is supported so that the steps are approximately level by means of transversely crossed standards which are adapted to hook or fit upon the upper end rod, which extends between the side bars. The construction is such that by closing the transverse pivoted supporting bars toward each other, the slotted upper ends will be brought into line with a partially flattened portion of the rod which they clasp and they can then be withdrawn over this flattened portion. When they are applied they are slipped on over this flattened portion while closed together and are then separated, the upper ends being moved outward to a point just within the side bars, and the lower ends being spread sufficiently to form a firm support upon the floor or ground.

AWNING ATTACHMENT.—J. J. Price, San Jose, Cal. No. 600,270. Dated March 8, 1898. This invention relates to improvements in adjustable awnings, such as are used to cover store and window fronts and other places and which are adapted to be unrolled or rolled up in a box above the door or window when not in use. It consists essentially of independent adjacent awnings, having a sufficient space between them to be raised or lowered independently, and in combination with these of an intermediate strip or hanger having an independent roller upon which it rolls, with a combination device actuating the roller and an extension fixed to the end of one of the awning bars projecting over the adjacent one and serving as an attachment for the lower end of the hanger.

GAS GENERATOR.—A. J. Tackle, Oakland, Cal. No. 600,298. Dated March 8, 1898. This invention relates to an apparatus designed to produce an explosive vapor or gas from petroleum oil or volatile hydrocarbon for use in gas engines. It consists essentially of an exterior casing having a discharge pipe from the upper portion adapted to connect with the engine, a centrally disposed vertical pipe extending upwardly through the center of the bottom of the casing, through which pipe the hot exhaust products from the engine are discharged, annular cups surrounding the pipes in succession from near the bottom to near the top, an enclosing open-bottomed casing intermediate between the cups and the outer casing, a supply pipe through which oil is delivered into the uppermost of the cups and allowed to overflow therefrom successively into those below, so that it is brought into contact with the outer surface of the exhaust pipe and vaporized. In conjunction with this an air pipe extends backwardly from the bottom within the exhaust pipe so that air is introduced and heated within this pipe, and arms or branches extend through the sides of the exhaust pipe and discharge into the enclosed chamber above the oil-containing cups so that the air is mixed with the oil vapor and is first carried downwardly through the inner chamber around the cups and the mixed vapor, thence passes upwardly to the discharge pipe, which delivers it in condition for use within the engine.

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A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

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FOR SALE—Eggs from my fine stock of single-comb Brown Leghorn fowls, winners of prizes at Cal. State Fair 1897, and Cal. State Poultry Ass'n Show 1897; E. S. Cunnins, judge; score, 87 to 93½; and C. S. P. Show 1898; W. W. Browning, judge; score, 91½ to 94. Also from my prize-winning stock of Mammoth Bronze Turkeys, 1st and 2nd at C. S. Fair 1897, and 2nd at C. S. P. Show 1898. Pearl Guinea eggs \$1 per setting. M. B. Turkey eggs 25c each. S. C. Brown Leghorn eggs 50c and \$1 per setting of 13. All farm-raised fowls; large, hardy, fine. Write for wants to J. R. Catlett, Pleasant Grove, Cal.

BROWN LEGHORN Eggs from my winners at San Francisco, Oakland and Sacramento. \$2.50 per 15; \$4.50 per 30. L. W. Matthias, Sacramento, Cal.

MRS. J. G. FREDERICKS, Madison, Cal. Fresh Eggs in small or large lots at reasonable prices from choice Brown and Buff Leghorns, Black and White Minorcas.

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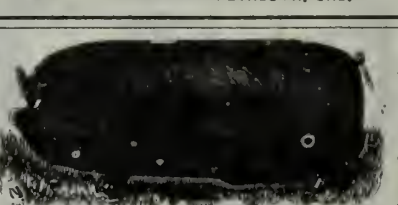
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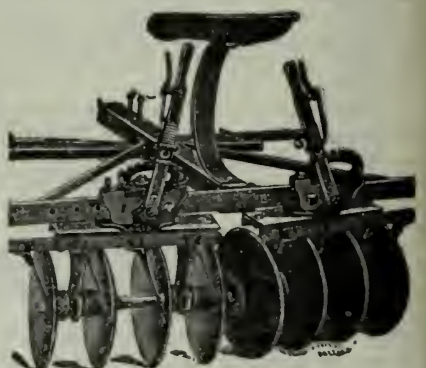
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Pacific Reversible Disc Harrow.

4-foot, 5-foot and 6-foot sizes in 16 or 20-inch discs. We guarantee that this Harrow can be more quickly reversed than any machine in the market. Our prices are a revelation. An extension can be furnished admitting of a space of between 5 and 6 feet between gangs. A center-cut device can be furnished, if desired.

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S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, March 23, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|---------------------|--------------------|
| Wednesday..... | \$1 04 1/4 @ 1 04 | \$ 85 1/2 @ 84 1/4 |
| Thursday..... | 1 04 1/4 @ 1 04 | 85 1/4 @ 84 1/4 |
| Friday..... | 1 04 1/4 @ 1 05 1/4 | 85 1/4 @ 84 1/4 |
| Saturday..... | 1 07 @ 1 03 | 86 3/4 @ 85 1/4 |
| Monday..... | 1 03 1/4 @ 1 05 1/4 | 84 1/4 @ 85 1/4 |
| Tuesday..... | 1 05 1/4 @ 1 06 1/4 | 85 1/4 @ 85 1/4 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|------------|------------|
| Wednesday..... | 7s 4 1/4 d | 7s 0 1/4 d |
| Thursday..... | 7s 4 1/4 d | 7s 0 1/4 d |
| Friday..... | 7s 4 1/4 d | 7s 0 1/4 d |
| Saturday..... | 7s 4 1/4 d | 7s 0 1/4 d |
| Monday..... | 7s 5 d | 7s 0 1/4 d |
| Tuesday..... | 7s 4 1/4 d | 7s 0 1/4 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|---------------------|---------------------|
| Thursday..... | \$1 40 @ 1 40 1/4 | \$1 37 1/2 @ 1 33 |
| Friday..... | 1 41 1/4 @ 1 42 | 1 33 1/2 @ 1 33 1/4 |
| Saturday..... | 1 42 @ 1 42 1/4 | 1 33 1/4 @ 1 34 |
| Monday..... | 1 46 3/4 @ 1 45 | 1 37 1/4 @ 1 35 1/4 |
| Tuesday..... | 1 46 3/4 @ 1 47 1/4 | 1 39 @ 1 37 |
| Wednesday..... | 1 46 @ 1 45 1/4 | 1 36 1/4 @ 1 35 1/4 |

Wheat.

The wheat market is firmer and higher than a week ago, but the improvement in values for actual wheat is difficult to state, owing to light trading and difference in views between buyers and sellers. Based on the local dry weather conditions, and prices established on Call Board in this center, spot wheat should be fully \$1.50 per ton higher than a week ago. On the other hand, European markets are lower. The quotable advance is 50c @ \$1 per ton. Liverpool futures show a decline for the week of about 2c per cental. In Chicago May wheat gained slightly, partly in sympathy with the market here, but July wheat on the Chicago Board is not as firm as a week ago. The Leiter interest is reported to have unloaded this week a million bushels or more of its holdings, and arranged for the shipment of the same so as to get the wheat out of the elevators in the vicinity of Chicago, and away from the bears, who might use the grain to break the market. Altogether, the situation at present is decidedly mixed.

There has not been much activity experienced the past week in the spot or sample market for wheat, conditions generally being unfavorable for buyers and sellers agreeing on terms. Absence of rain in noteworthy quantity indicated a light yield of wheat in a large portion of the State this season, and caused holders as a rule to contend for higher figures than were obtainable. In not a few instances offerings were withdrawn wholly from the market for the time being. Foreign markets showed no improved tone, and no change for the better in quotable rates. Ocean freights are materially lower, and are not now quotable over 22s 6d per ton for wheat in iron ships to Cork, U. K., for orders, usual option as to final destination. The ships now taking cargo were, however, with one or two exceptions, chartered at higher figures, and effort is being made to keep loss on these higher charters down to lowest possible limit. That ocean freights have yet struck bottom is by no means assured. Should the season prove as dry and the yield as light as present prospects indicate, ships are almost certain to be offered at still lower figures than have yet been established this spring. Most if not all the reduction in freight is apt to go to the benefit of wheat. The recent decline in charter rates is equivalent to nearly \$1 per ton. In a short time wheat should harden correspondingly, even more if backed up by any substantial improvement in foreign centers. A transfer was reported this week of 75,000 sacks of San Joaquin Valley wheat of several grades at \$1.37 1/2 @ 1.40, Stockton delivery. The value aggregated \$115,000. While only reported Monday, the sale had been effected some days previous.

| | |
|-------------------------------------|---------------------|
| California Milling..... | \$1 45 @ 1 52 1/4 |
| Cal. No. 1 shipping, alongside..... | 1 42 1/4 @ 1 43 1/4 |
| Oregon Valley..... | 1 40 @ 1 42 1/4 |
| Walla Walla Blue Stem..... | 1 42 1/4 @ 1 50 |
| Walla Walla Club..... | 1 37 1/4 @ 1 42 1/4 |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 white wheat per cental for the week were as follows for the options named:

| |
|--|
| May, 1898, delivery, \$1.40 @ 1.47 1/4. |
| December, 1898, delivery, \$1.33 1/2 @ 1.39. |
| Wednesday, at regular noon session of Call Board, May wheat sold at \$1.46 @ 1.45 1/4; |
| December, 1898, \$1.36 1/2 @ 1.35 1/4. |

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|-------------------|-------------------|
| Liv. quotations..... | 6s 3/4 @ 6s 4 1/4 | 7s 9d @ 7s 10d |
| Freight rates..... | 15 @ 16 1/4s | 22 1/4 @ —s |
| Local market..... | \$1.35 @ 1.40 | \$1.42 1/2 @ 1.45 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

Market has a moderately firm tone, and is quotably higher, with prospects of ruling prices at an early date. The stiff and remunerative prices lately current for mill feed have tended to keep quotations for flour down below the parity of wheat. Millers have been realizing a good profit on the offal and have been letting flour go at actual cost or less.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | 23 25 @ 30 40 |
| Superfine, good to choice..... | 3 50 @ 3 80 |
| Country grades, extras..... | 4 20 @ 4 50 |
| Choice and extra choice..... | 4 50 @ 4 70 |
| Fancy brands, jobbing..... | 4 75 @ 4 90 |
| Oregon, Bakers' extra..... | 4 10 @ 4 40 |
| Walla Walla, Bakers' extra..... | 4 10 @ 4 40 |

Barley.

Market is strong and higher for all descriptions, due to weather influences and light supplies. Large quantities of barley have been shipped to England, some having cleared for above destination within the past thirty days. There is none now going aboard vessel for Europe, however, and very little is being forwarded to any outside point. Present receipts include moderate quantities from Oregon and Washington, with probabilities of imports from above sections being larger in the near future. Values in the speculative market advanced much more sharply than in the sample market, and trading in options was part of the time quite active. May feed touched \$1.20 1/2, being an advance of 11 1/2c over highest figure of the preceding week. December feed sold up to \$1.12 1/2, being 13 1/2c higher than best figure quoted a week ago. These prices are still low as compared with values which ruled in some former seasons not very remote. The market at the close (Wednesday) was not so strong as on preceding day, owing to slight prospects of rain.

| | |
|---------------------------------|-----------------|
| Feed, No. 1 to choice..... | 1 15 @ 1 20 |
| Feed, fair to good..... | 1 12 1/2 @ 1 15 |
| Brewing, No. 1 to choice..... | 1 20 @ 1 25 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

| |
|--|
| May, 1898, delivery, \$1.08 @ 1 20 1/2. |
| December, 1898, delivery, 96 3/4c @ \$1.12 1/2. |
| Wednesday at regular noon session of the Call Board May, 1898, feed sold at \$1.18 1/4 @ 1.15 1/2; Dec., 1898, \$1.11 1/2 @ 1.10 1/4c. |

Oats.

Prices have been on the up-grade most of the current week for both feed and milling descriptions. Although oats come mainly from the northern portion of this State and from Oregon and Washington, where there is no special scarcity of supplies at present, and where prospects are favorable for coming yield, they are being held higher in consequence of the stiffer prices current for barley. Holders of oats were not slow to take advantage of the opportunity to advance values. Black and red oats for feed received little attention and prices for these were poorly defined.

| | |
|-------------------------------|-----------------|
| White Oats, fancy feed..... | 1 25 @ 1 30 |
| White, good to choice..... | 1 20 @ 1 25 |
| White, poor to fair..... | 1 15 @ 1 20 |
| Gray, common to choice..... | 1 17 1/4 @ 1 25 |
| Milling..... | 1 22 1/4 @ 1 25 |
| Surprise, good to choice..... | 1 25 @ 1 35 |
| Black Russian..... | 1 35 @ 1 50 |
| Red..... | 1 30 @ 1 45 |

Corn.

Tendency was to more firmness, but improvement was light, as compared with advances in values for some other feed cereals, notably barley. Millers who are turning out cracked corn and feed meal are running almost wholly on Eastern corn. Were it not for this fact, stiffer figures would be current for the home product. To purchase freely of any variety of domestic, an advance on current quotations would have to be paid.

| | |
|----------------------------------|---------------------|
| Large White, good to choice..... | 1 12 1/4 @ 1 17 1/4 |
| Large Yellow..... | 1 10 @ 1 12 1/4 |
| Small Yellow..... | 1 15 @ 1 17 1/4 |
| Eastern Yellow..... | 1 07 1/4 @ 1 10 |
| Egyptian White..... | — @ — |
| Popcorn, shelled, 3/4 lb..... | — @ — |

Rye.

Market is slightly higher than last quoted, with arrivals and offerings light. Demand is not particularly brisk.

| | |
|--------------------------|-----------------|
| Good to choice, new..... | 1 07 1/4 @ 1 10 |
|--------------------------|-----------------|

Buckwheat.

Scarcely anything doing in this cereal and values are consequently largely nominal. Quotations are based on latest reported transactions.

| | |
|---------------------|-------------|
| Good to choice..... | 1 75 @ 1 90 |
| Silverskin..... | — @ — |

Beans.

Most kinds of white beans are being firmly held, but inquiry for them lately has not been very active. Should a brisk demand set in, prices would speedily advance, at least until they touched the \$2 mark, which would not be a high figure, all things considered. Limas are not being urged to sale, holders

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having confidence in stiffer figures ruling before another season opens. Colored beans are not receiving much attention, and as prices of colored are now comparatively high, especially for Bayos and Pinks, prospects cannot be termed favorable for further hardening of values for beans of this class.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 50 @ 1 60 |
| Small White, good to choice..... | 1 50 @ 1 60 |
| Lady Washington..... | 1 45 @ 1 55 |
| Butter, small..... | 1 45 @ 1 55 |
| Butter, large..... | 1 60 @ 1 75 |
| Pinks..... | 2 35 @ 2 60 |
| Bayos, good to choice..... | 2 80 @ 2 90 |
| Reds..... | 2 00 @ 2 25 |
| Red Kidneys..... | 2 00 @ 2 25 |
| Limas, good to choice..... | 2 10 @ 2 25 |
| Black-eye Beans..... | 2 35 @ 2 60 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

The bean market on the Atlantic side is thus outlined by a New York contemporary, according to recent advices by mail, prices quoted being per 60-lb. bushel:

The jobbing demand for Marrow beans has been light all the week, and the purchases for export have been on a smaller scale; but receivers have generally felt some confidence in the position and there has been a fairly steady holding throughout. Sales of choicest quality are at \$1.37 1/4 @ 1.40, mostly the latter price. Medium have sold very slowly; and while \$1.15 has been obtained in most cases, here and there a lot has been shaded 2 1/2c. There has been a little more pressure to sell Pea and the price has been lowered to \$1.10 @ 1.12 1/4, at which it is now easy to buy the best lots. Exporters have taken a moderate quantity of Red Kidney, mainly at \$1.67 1/2 f.o.b., but the supply offering has been rather in excess of the demand and late prices have been barely sustained. Several lots of choice quality in second-hand barrels have sold to dealers at \$1.60, and some fair goods for less. White Kidney have ruled about steady. Turtle Soup have declined under an exceedingly dull trade and rather freer offerings. Scarcely any demand for Yellow Eye. California Lima have shown further weakness; speculative buyers have withdrawn entirely and jobbers buy only as urgent needs require; quote \$1.50 @ 1.53 1/4. Green peas quiet and the tone is slightly easier.

Dried Peas.

This market has developed no additional firmness since last review. Offerings are light of either Green or Niles. Quotations are higher than last stated.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$2 00 @ 2 10 |
| Niles Peas..... | 1 65 @ 1 75 |

Wool.

Nothing of consequence has been yet done in Spring wools of the 1898 clip, and it will probably be several weeks before the market opens. Any quotations which might be named in the meantime for the new clip would be wholly the result of guesswork. The condition of the San Joaquin and Southern wools this season will be below the average, owing to the feed being poor. Many of the sheep have been driven long distances over dusty roads, and this will make the fleeces heavy and dirty. Such wools are not likely to meet with prompt sale or to command high prices.

| | SPRING. | FALL. |
|-----------------------------------|---------|---------|
| Oregon Eastern, choice..... | 12 @ 14 | 11 @ 13 |
| Oregon Eastern, fair to good..... | 10 @ 11 | 9 @ 12 |
| Northern, free..... | 11 @ 13 | 9 @ 12 |
| Southern Mountain..... | 9 @ 12 | |

Hops.

There is little doing in the local market and no evidences at present of any great activity in other centers. Quotations remain virtually as last noted, but large transfers could not be effected at full current figures. Supplies of strictly choice are, however, of small volume. Inferior hops are offering, mainly from Oregon, and these are wholly neglected, being unfit for brewers' needs and not wanted at present for other purposes.

| | |
|--------------------------------|---------|
| Good to choice, 1897 crop..... | 12 @ 16 |
|--------------------------------|---------|

Reports from the East by mail of late date furnish the following New York advices concerning the hop market:

If there has been any change this week, it has been toward a little softening of values. Business has continued quite dull, and, though the offerings are not much larger, there is a trifle more pressure to sell in certain directions. Brewers do not seem inclined to add to the stocks that they now have on hand, and dealers are carrying about all the hops they care to in the present condition of the market. Export business is failing off; most of the low-grade Pacifics have been shipped from the coast, largely on direct consignments to English operators, and not many new orders are coming to hand. Latest cable advices report slight depression resulting from recent heavy arrivals of low-grade stock from the United States. As regards values in our local market, it looks as if strictly choice State or Pacific Coast could not be brought below 18 1/4 @ 19c, because of the limited quantity of such; but good to prime grades are offering at 16 @ 17 1/4c, common to fair at 12 @ 15c, and some of the moldy low grade Oregon have sold at 10 @ 11c, possibly a little less in instances. The tone of the country markets is slightly easier; holdings are light, but buyers are showing very little interest.

Hay and Straw.

Further barding of values for hay has been experienced since last report, from same causes previously noted, lack of rain in most of the hay producing sections of the State and very light supplies now on hand. The prediction is made by some dealers that values have not yet touched the zenith for the season. Straw was not quotably higher, although in light receipt.

| | |
|--------------------|---------------|
| Wheat..... | 18 00 @ 23 00 |
| Wheat and Oat..... | 16 00 @ 21 00 |

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| | |
|----------------------|---------------|
| Oat..... | 16 00 @ 20 00 |
| Barley..... | 15 00 @ 19 00 |
| Clover..... | 12 00 @ 14 00 |
| Stock Hay..... | 10 00 @ 12 00 |
| Alfalfa..... | 10 00 @ 12 00 |
| Compressed..... | 18 00 @ 23 00 |
| Straw, 3/4 bale..... | 40 @ 50 |

Millstuffs.

Bran was in fair receipt from Oregon, but continues to bring good figures. Middlings brought fully as stiff prices as last quoted. Rolled Barley was higher and firm at the advance. Milled Corn sold above the figures of preceding week.

| | |
|---------------------|---------------|
| Bran, 3/4 ton..... | 15 50 @ 16 50 |
| Middlings..... | 19 00 @ 23 00 |
| Barley, Rolled..... | 25 00 @ 25 50 |
| Cornmeal..... | 23 50 @ 24 00 |
| Cracked Corn..... | 24 50 @ 25 00 |

Seeds.

No change to record in the general condition of this market. Mustard seed is out of stock, and there is nothing at present upon which to base quotations. Flaxseed is in light supply. Recent receipts represented mainly prior arrival purchases. Alfalfa seed is meeting with scarcely any inquiry and market is weak. Bird seed is without quotable change.

| | Per ctt. |
|----------------------------|-------------|
| Mustard, Yellow..... | 2 75 @ 3 00 |
| Mustard, Trieste Seed..... | 2 90 @ 3 10 |
| Mustard, Wild Brown..... | 2 00 @ 2 25 |
| Flax..... | 2 10 @ 2 25 |

| | Per lb. |
|--------------------|---------------|
| Canary..... | 2 1/2 @ 2 3/4 |
| Rape..... | 2 1/2 @ 2 3/4 |
| Hemp..... | 2 1/2 @ 3 1/4 |
| Alfalfa, Utah..... | 5 1/2 @ 6 1/4 |

Bags and Bagging.

The Grain Bag market is devoid of encouraging features for the holding or selling interest. Business is insignificant and present indications are that market will rule weak throughout the season. Wool Sacks are offering at easy rates, with supplies likely to prove larger than will be required for this year's clip.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, buyer July..... | — @ — |
| Calcutta Grain bags, 22x36, spot..... | 5 1/4 @ 5 1/2 |
| State Prison bags, per 100..... | 5 30 @ — |
| Wool sacks, 4 lb..... | 30 @ — |
| Wool sacks, 3 1/2 lb..... | 27 @ — |
| Gunnies..... | 10 @ — |
| Bean bags..... | 4 1/4 @ 4 1/2 |
| Fruit sacks, cotton..... | 5 1/4 @ 6 1/4 |

Hides, Pelts and Tallow.

Hide market is slightly lower than last quoted, with a rather weak tone, the demand not being urgent at the reduced figures. Pelts sold within former range, but only for most select were values well maintained. Tallow was in fair request, values continuing without appreciable change.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|-------------|
| Heavy Steers, over 56 lbs..... | — @ 9 | — @ 9 |
| Medium Steers, 48 to 56 lbs..... | — @ 9 1/4 | — @ 8 1/4 |
| Light Steers, under 48 lbs..... | — @ 9 | — @ 8 |
| Heavy Cow Hides, over 50 lbs..... | — @ 9 | — @ 8 |
| Light Cow Hides, under 50 lbs..... | — @ 9 | — @ 8 |
| Wet Salted Kip..... | — @ 9 1/4 | — @ 8 1/4 |
| Wet Salted Veal..... | — @ 10 | — @ 9 |
| Wet Salted Calf..... | — @ 10 | — @ 9 |
| Dry Hides..... | — @ 16 1/4 | 13 @ 13 1/4 |
| Dry Kip and Veal, 11 to 16 lbs..... | — @ 16 | — @ 12 |
| Dry Calf, under 4 lbs..... | 18 @ 20 | 16 @ 17 |
| Horse Hides, large..... | 2 25 @ 2 75 | |
| Horse Hides, medium..... | 2 00 @ 2 25 | |
| Horse Hides, small..... | 25 @ 50 | |
| Colts' Hides..... | 25 @ 50 | |
| Pelts, long wool, per skin..... | 90 @ 1 15 | |
| Pelts, medium, per skin..... | 70 @ 90 | |
| Pelts, short wool, per skin..... | 40 @ 60 | |
| Pelts, shearing, per skin..... | 15 @ 30 | |
| Deer Skins, best summer..... | 25 @ 30 | |
| Deer Skins, good medium..... | — @ 20 | |
| Deer Skins, thin winter..... | — @ 10 | |
| Elk Hides..... | 10 @ 12 1/4 | |
| Tallow, good quality..... | 3 @ 3 1/4 | |
| Tallow, No. 2..... | 2 @ 2 1/4 | |
| Goat Skins, perfect..... | 30 @ 37 1/2 | |
| Goat Skins, damaged..... | 10 @ 20 | |
| Kid Skins..... | 5 @ 10 | |

Honey.

Present supplies are mainly Comb honey, demand for which is mainly local and of slim volume, so there is little or no opportunity for the market for this description developing strength. Extracted is offered sparingly and buyers find it necessary to pay full current figures. In a small way an advance on quotations is being realized.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 4 1/4 @ 5 |
| Extracted, Light Amber..... | 3 1/2 @ 4 1/4 |
| White Comb, 1-lb frames..... | 8 @ 9 1/4 |
| Amber Comb..... | 5 @ 6 |

Beeswax.

Market is lightly stocked and favors sellers. There is no likelihood of prices being lower during the balance of the season.

| | |
|-----------------------------|---------|
| Fair to choice, 3/4 lb..... | 24 @ 27 |
|-----------------------------|---------|

Live Stock and Meats.

A strong tone was observable in the beef market, and every prospect of the situation continuing against buyers for some months to come. Mutton of desirable quality is bringing tolerably good prices, with demand equal to the immediate supply. Hog market was quiet and lower, with prices here still rather high as compared with values in Eastern packing centers.

| | |
|---|-----------|
| Beef, 1st quality, dressed, net 3/4 lb..... | 6 1/4 @ 7 |
| Beef, 2d quality..... | 5 1/4 @ 6 |

| | |
|-----------------------------------|----------|
| Beef, 3d quality..... | 4 @ 5 |
| Mutton—ewes, 8@8½c; webbers..... | 8½ @ 9 |
| Hogs, hard grain fed, medium..... | 4½ @ 4½ |
| Hogs, small..... | 3½ @ 4 |
| Hogs, large hard..... | 4½ @ 4½ |
| Hogs, soft and feeders..... | 3½ @ 3 |
| Hogs, country dressed..... | 5 @ 5½ |
| Veal, small, ½ lb..... | 6 @ 7½ |
| Veal, large, ½ lb..... | 6½ @ 7 |
| Lamb, Yearling, ½ lb..... | 9 @ — |
| Lamb, Spring, ½ lb..... | 10 @ 12½ |

Poultry.

Choice Young Chickens were not plentiful, and, being in good request, sold to advantage, some of superior quality going to special custom at an advance on quotations. Old Chickens moved slowly at low figures. Hen Turkeys sold fairly well, but Gobblers were neglected. Young Ducks, Geese and Pigeons did not lack for custom, and where they were particularly desirable as to size and condition an advance was occasionally realized on figures warranted as a quotation. Three carloads of Eastern poultry arrived within the week.

| | |
|------------------------------------|-------------|
| Turkeys, dressed, ½ lb..... | 12½ @ 15 |
| Turkeys, live hens, ½ lb..... | 12 @ 13 |
| Turkeys, live gobblers..... | 10 @ 11 |
| Hens, Cal., ½ doz..... | 3.50 @ 4.00 |
| Roosters, old..... | 3.50 @ 4.00 |
| Roosters, young, (full-grown)..... | 7.00 @ 7.50 |
| Fryers..... | 6.00 @ 6.50 |
| Broilers, large..... | 5.50 @ 6.00 |
| Broilers, small..... | 3.50 @ 4.50 |
| Ducks, young, ½ doz..... | 7.00 @ 9.00 |
| Ducks, old..... | 4.00 @ 5.00 |
| Geese, ½ pair..... | 1.50 @ 1.75 |
| Goslings, ½ pair..... | 2.50 @ 3.00 |
| Pigeons, Old, ½ doz..... | 1.25 @ — |
| Pigeons, Young..... | 1.75 @ 2.00 |

Butter.

Market is firm at a slight advance, with a good demand for desirable qualities, the most positive inquiry being on shipping orders from the north. The cold, dry weather also had some effect, tending to restrict the production. The season will undoubtedly be a short one in the middle and southern counties, but the northern dairy section gives promise of turning out more butter by at least a third than it did last year.

| | |
|-------------------------------------|----------|
| Creamery extras, ½ lb..... | 18½ @ 19 |
| Creamery firsts..... | 18 @ — |
| Creamery seconds..... | 17 @ 17½ |
| Dairy select..... | 16½ @ 17 |
| Dairy seconds..... | 14 @ 16 |
| Dairy, soft and weedy..... | — @ — |
| Mixed store..... | 14 @ 15 |
| Creamery in tubs..... | 18 @ 19 |
| Pickled roll..... | — @ — |
| Dairy in tubs..... | — @ — |
| Firkin, Cal., choice to select..... | 17 @ 18 |
| Firkin, common to fair..... | 15 @ 16 |

Cheese.

Tendency is to more firmness, with indications that higher prices will rule in the near future. Cheese are now, and for some time past have been, bringing relatively better figures than butter. This is likely to be the case throughout the present season, as much of the cheese is produced in localities where feed this summer will be scarce and high.

| | |
|-----------------------------------|--------|
| California fancy flat, new..... | 9 @ 9½ |
| California, good to choice..... | 8½ @ 9 |
| California, fair to good..... | 7½ @ 8 |
| California Cheddar..... | 9 @ 10 |
| California, "Young Americas"..... | 9 @ 10 |

Eggs.

Several causes have combined to advance prices for eggs. First and most prominent is a more than ordinarily active demand on speculative account for eggs to go into cold storage. Then there have been tolerably liberal shipping orders lately, and some trouble has been experienced in filling them. In addition to the increased demand here, supplies have undoubtedly been held back to some extent in producing sections. Some Eastern eggs have been ordered, present prices admitting of Eastern being laid down here at about same figures as cheapest store-gathered can be secured for.

| | |
|---|----------|
| California, select, large white and fresh..... | 14 @ — |
| California, select, irregular color & size..... | 13 @ 13½ |
| California, good to choice store..... | 12 @ 12½ |
| California, common to fair store..... | — @ — |
| Oregon, prime..... | — @ — |
| Held Eastern, as to section and grading..... | — @ — |
| Local Cold storage eggs..... | — @ — |

Vegetables.

There were fair receipts of Asparagus, Peas and Rhubarb from near-by points, but arrivals from Los Angeles district and other outside sections were of slim volume. Supplies as a rule were not excessive, and market for best qualities tended more in favor of the producing than of the consuming interest. Asparagus proved an exception, going at a decline. Onions were plentiful as compared with the demand, and market was weak, especially for other than most select, suitable for shipment. Most of the present offerings show poor keeping qualities. Cabbage and Cauliflower were in light stock and market ruled firm.

| | |
|--------------------------------------|-------------|
| Asparagus, No. 1, ½ lb..... | 5 @ 6 |
| Asparagus, common to fair, ½ lb..... | 3 @ 4 |
| Beans, String, ½ lb..... | — @ — |
| Beans, Lima, ½ lb..... | — @ — |
| Beans, Refuge, ½ lb..... | — @ — |
| Beans, Wax, ½ lb..... | — @ — |
| Cabbage, choice garden, 100..... | 70 @ 80 |
| Cauliflower, ½ doz..... | 50 @ 60 |
| Corn, Green, ½ sack..... | — @ — |
| Corn, Alameda, ½ crate..... | — @ — |
| Cucumbers, hot house, ½ doz..... | 50 @ 1.00 |
| Egg Plant, ½ lb..... | 10 @ — |
| Garlic, ½ lb..... | 4 @ 5 |
| Mushrooms, Buttons, ½ lb..... | — @ — |
| Mushrooms, Wild, ½ lb..... | — @ — |
| Okra, Dried, ½ lb..... | 12½ @ 15 |
| Onions, Yellow, good to choice..... | 2.00 @ 2.50 |
| Onions, Yellow, cut..... | 1.50 @ 1.75 |
| Peas, Sweet, Garden, ½ lb..... | 3 @ 3½ |
| Peppers, Green Chile, ½ lb..... | — @ — |
| Rhubarb, ½ box..... | 75 @ 1.25 |
| Squash, Summer, ½ lb..... | 1.00 @ 1.25 |
| Tomatoes, ½ box or crate..... | 1.50 @ 2.00 |

Potatoes.

Choice to select table potatoes were not in large receipt, and brought fully as good figures as at any previous date the current season. Common qualities were offered freely, and for these the market lacked firmness, de-

mand for ordinary stock being slow at the low figures prevailing. Seed potatoes ruled about as last quoted with movement light. New potatoes, mostly volunteer, were in small receipt. Sweetens were in such light supply as to be hardly quotable.

| | |
|--|-----------|
| Early Rose, River, ½ cental..... | 60 @ 70 |
| Peerless, River..... | — @ — |
| Reds River..... | 50 @ 60 |
| Garnet Chille, Mission..... | — @ — |
| Burbanks, Salinas..... | 75 @ 1.15 |
| Burbanks, River, ½ sack..... | 55 @ 65 |
| Burbanks, Petaluma and Tomales, ½ cti..... | 50 @ 60 |
| Burbanks, Humboldt, ½ cti..... | 50 @ 65 |
| Burbanks, Oregon, ½ cental..... | 55 @ 90 |
| Garnet Chile, Oregon..... | — @ — |
| New Potatoes, ½ lb..... | 3 @ 3½ |
| Sweet River, ½ cental..... | — @ — |
| Sweet Merced..... | 75 @ 1.00 |

The Fruit Market.

Fresh Fruits.

Apples are still coming forward and in tolerably liberal quantity for this late date. Arrivals are mainly from northern California and from southern Oregon. While there are not many decidedly inferior, there are few which can be termed choice to fancy. Offerings are mainly of fair to good quality and not of sufficiently high grade to draw forth any very brisk competition between buyers. Values were without radical change, the tendency being to a little wider range, common averaging slightly lower, while most select inclined in favor of sellers, and occasionally in a small way brought a moderate advance on outside quotation below noted. The absence of other deciduous fruit, and also of berries in quotable quantity, together with cool weather most of the time, operated in favor of the apple trade. It is not probable there will be much demand for last season's fruit after the next thirty days. The spring season will then have opened and early fruits, more especially berries, will be apt to be on market in considerable quantity. The first Strawberries of the season arrived this week in a small way from Santa Clara section and brought about \$1.50 per basket.

| | |
|--------------------------------------|-------------|
| Apples, fancy, 4-tier, ½ box..... | 1.25 @ 1.35 |
| Apples, choice, 4-tier, ½ box..... | 75 @ 1.00 |
| Apples, fair to good, 50-lb box..... | 50 @ 75 |
| Apples, common to fair, ½ box..... | 36 @ 50 |

Dried Fruits.

Owing to reports of serious damage by frost to much of the fruit in this State now budding, the market for cured and evaporated fruits should show more firmness, but no noteworthy improvement in demand or in quotable values has yet developed. Apricot buds fared the worst, and in numerous localities the crop is said to be totally ruined. Peaches were damaged to considerable extent, and Cherries were touched by frost in some localities. Prunes escaped any very serious injury, so far as heard from. The movement in cured fruits of every description has been light the current week in every direction, including the Klondike, orders from which section are on the wane. Prunes have gone Eastward in limited quantity, and most other varieties have moved in a small way, but not in sufficient amount to impart an air of activity to the market. Dealers almost without exception throughout the East and South are buying just as they need the goods, and seemingly cannot be induced to stock up ahead.

EVAPORATED OR BLEACHED.

| | |
|--|---------|
| Apricots, Royal, in sacks, per lb..... | 4½ @ 5 |
| Apricots, Royal, fancy..... | 6 @ — |
| Apricots, Moorpark..... | 7 @ 9 |
| Apples, in boxes..... | 6½ @ 7 |
| Figs, fancy pressed..... | 8 @ 10 |
| Nectarines, White..... | 4½ @ 5 |
| Nectarines, Red..... | 4½ @ 5 |
| Peaches, unpeeled, choice..... | 3½ @ 4 |
| Peaches, unpeeled, fancy..... | 5 @ 5½ |
| Peaches, peeled, in boxes..... | 9 @ 12 |
| Pears, unpeeled Bartlett's, balved, fancy..... | 7 @ 8 |
| Pears, halved, unpeeled Bartlett's..... | 4½ @ 6 |
| Pears, quartered, unpeeled Bartlett's..... | 4 @ 5 |
| Pears, peeled and sliced..... | — @ — |
| Plums, pitted..... | 4½ @ 5½ |
| Prunes, in sacks, 40-50's..... | 4½ @ 5 |
| 50-60's..... | 3 @ 3½ |
| 60-70's..... | 2½ @ 2¾ |
| 70-80's..... | 2¼ @ 2½ |
| 80-90's..... | 2 @ 2¼ |
| 90-100's..... | 1½ @ 2 |

Above figures are on basis of 2½ @ 2¾ c for 4 sizes. Prunes in boxes, ½ c higher for 25-lb boxes, ¼ c higher for 50-lb boxes.

| | |
|---------------------------------------|--------|
| 4 sizes Santa Claras and equal..... | 2½ @ — |
| 4 sizes San Joaquin and Northern..... | 2½ @ — |
| Prunes, Silver..... | 5 @ 8 |

COMMON SUN-DRIED.

| | |
|-------------------------|--------|
| Apricots, ordinary..... | 4 @ 5 |
| Apples, sliced..... | 3½ @ 4 |
| Apples, quartered..... | 3½ @ 4 |
| Figs, Black..... | 2 @ 3½ |
| Figs, White..... | 3 @ 4 |
| Peaches, unpeeled..... | 3 @ 4 |
| Plums, unsplit..... | 1 @ 1½ |

A New York authority furnishes the following by mail of late date regarding the dried fruit market in that center:

The market has shown no material change this week. There has been a steady home jobbing demand for evaporated apples, but exporters have shown little interest; demand is mostly for prime or grades closely approximating, though choice and fancy have a fair jobbing call at the recent advance. Sun-dried quarters are selling fairly, especially the lower grades, and the best grades of sun-dried sliced are inquired for. Chops are firmer with some stock held at 4c, though no important sales reported. Cores and skins easier and top quotation more extreme. Raspberries have been offered more freely and prices show a decline. Blackberries and huckleberries held steady. Cherries in few bands and generally held above figures quoted. California fruit has continued in active demand, particularly the cheaper grades, and former prices have been well sustained.

| | |
|--|---------|
| Apricots, Cal. Moorpark, 1897, per lb..... | 8 @ 11 |
| Apricots, Cal. Royal, 1897, per lb..... | 5½ @ 8 |
| Peaches, Cal., 1897, peeled, per lb..... | 10 @ 16 |
| Peaches, Cal., 1897, unpeeled, per lb..... | 5 @ 9 |
| Pears, Cal., 1897, per lb..... | 5 @ 10 |
| Prunes, Cal., 1897, per lb..... | 3 @ 8 |

Raisins.

Trade in this line continues slow. Values are without quotable change, but there is so

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EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------|--------------------|----------------------|
| Flour, 4-sks..... | 68,376 | 2,377,488 |
| Wheat, cts..... | 342,640 | 8,927,621 |
| Barley, cts..... | 6,787 | 2,873,772 |
| Oats, cts..... | 572 | 13,115 |
| Corn, cts..... | 177 | 32,125 |
| Beans, sks..... | 2,500 | 269,806 |
| Hay, bales..... | 1,989 | 61,600 |
| Wool, lbs..... | — | 13,391,776 |
| Hops, lbs..... | 1,184 | 1,186,561 |
| Honey, cases..... | 27 | 6,548 |
| Potatoes, pkgs..... | 1,796 | 172,443 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

F. O. B. FRESNO DELIVERY.

| | |
|--------------------------------------|-------------|
| Imperial Clusters, per box..... | — @ — |
| Dehesa Clusters, per box..... | — @ — |
| Fancy Clusters, per box..... | — @ — |
| Boxes, London layers, 20-lb box..... | 1.00 @ 1.10 |

(Usual advance for fractions.)

| | |
|------------------------------------|---------|
| Loose Muscatel, 4-crown, ½ lb..... | 3½ @ — |
| Loose Muscatel, 3-crown..... | 2½ @ 3 |
| Loose Muscatel, 2-crown..... | 1½ @ 1¾ |
| Sultanas..... | 3½ @ 3¾ |
| Seedless Muscatel..... | 1½ @ 2 |
| Dried Grapes..... | 1 @ 1½ |

Citrus Fruits.

Orange market lacked activity, owing to some extent to cool weather. Receipts were of liberal volume, but there was no special surplus of choice to select Navels, and the latter commanded about as good figures as preceding week. Common Seedlings and ordinary Navels were in larger supply than the demand for such stock warranted, and prices averaged low. Lemons were in more than sufficient stock to accommodate the demand, and values were without improvement. The limited inquiry which existed was mainly for select. Limes were in fair supply, but were mostly unripe and consequently not very desirable.

Nuts.

| | |
|---------------------------------|-------------|
| Oranges—Navel ½ box..... | 1.25 @ 2.50 |
| St. Michaels..... | 1.50 @ 2.00 |
| Seedlings..... | 75 @ 1.25 |
| Lemons—Cal., select, ½ box..... | 1.75 @ 2.00 |
| Cal., good to choice..... | 1.00 @ 1.50 |
| Cal., common to good..... | 50 @ 1.00 |
| Limes—Mexican, ½ box..... | 5.00 @ 5.50 |
| Cal., small box..... | 75 @ 1.25 |

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|--------------------|--------------------|----------------------|
| Flour, 4-sks..... | 91,742 | 3,705,634 |
| Wheat, cts..... | 309,671 | 9,039,111 |
| Barley, cts..... | 16,170 | 4,126,631 |
| Oats, cts..... | 8,815 | 522,019 |
| Corn, cts..... | 4,710 | 251,013 |
| Rye, cts..... | 860 | 31,553 |
| Beans, sks..... | 4,359 | 504,219 |
| Potatoes, sks..... | 20,762 | 877,086 |
| Onions, sks..... | 1,618 | 89,523 |
| Hay, tons..... | 1,351 | 100,117 |
| Wool, bales..... | 223 | 49,797 |
| Hops, bales..... | 224 | 8,087 |

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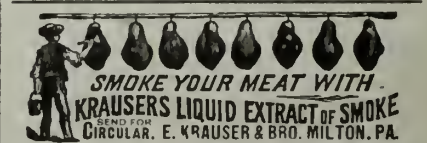
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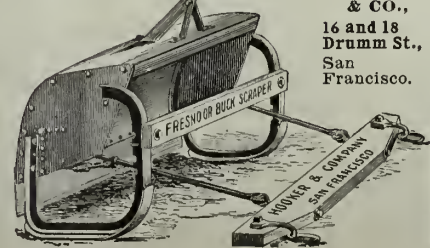
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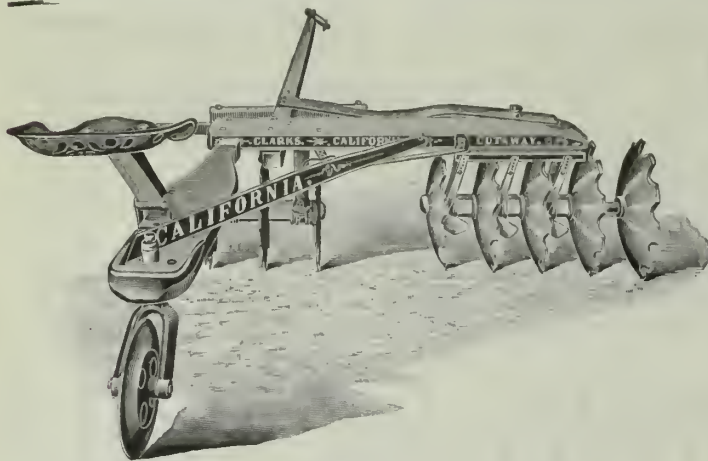
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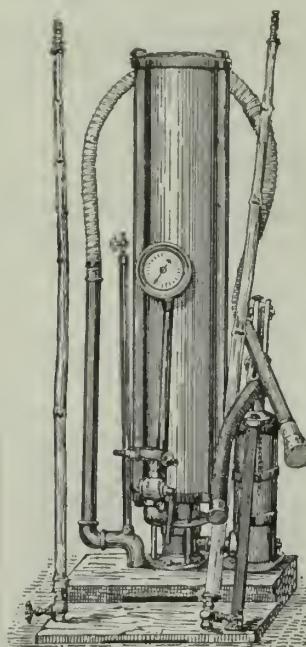
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 14.

SAN FRANCISCO, SATURDAY, APRIL 2, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

The Alamitos Sugarie.

Last week we gave an outside view of the Alamitos sugarie in Orange county, California, and some facts about its proprietors. This week we take a closer view which discloses the division of the buildings into two main groups, one on each side of the railway which brings in the raw materials and carries away the finished products. Hereafter we shall enter these buildings and inspect the great resources of machinery and appliances which they contain. This week's engraving is suggestive of the fact that very much more than beets are necessary to furnish a sugar factory. Vast quantities of water are used and it must be of high purity. Great amounts of limestone are consumed, for lime is the chief agency by which undesirable elements of the juice are rendered innocuous. Large amounts of fuel are also required for there is large use of steam power to move the multitude of machines and to accomplish the evaporation of the water until the juice reaches crystallizing condition. It is of greatest importance, then, that the railways should run to the very doors of the factories, to bring in cheaply all the needed supplies, including the beets themselves when they are grown in distant fields.



MR. E. H. DYER OF ALVARADO.

that with good management it could be made profitable and successful, having purchased the land and buildings owned by the old company at Alvarado, undertook the difficult task of interesting capital, but in the face of so many failures, and at a time when mining and other enterprises offered such inducements, it was not until February, 1879, that the Standard Sugar Company was organized, with a capital stock of \$200,000. This company made a success from the start. The profit of the first four campaigns was \$104,000, this being the first beet sugar made in the United States at a profit. Since this early success Mr. E. H. Dyer has associated with himself his son and nephew and undertaken general design and equipment of sugar factories.

The Alamitos factory is an exponent of the excellence of American design and construction of beet sugar machinery. We shall show in future issues more fully what that statement means. The factory is what the Dyers term their 350-700 ton plant; that is, the buildings and some of the machinery are large enough for working 700 tons of beets per day, but only sufficient machinery is erected at first to work 350 tons per day, the balance to be put in whenever desired. The Clarks think this an ideal arrangement, inasmuch as it requires but little more build-



VIEW OF THE ALAMITOS SUGAR FACTORY, SHOWING ARRANGEMENT OF BUILDINGS WITH REFERENCE TO TRANSPORTATION.

This page also affords us opportunity to recognize the builder of the Alamitos factory, whose portrait is appended. Mr. E. H. Dyer has rendered many significant services to the American beet sugar industry. Mr. Holabird in his pamphlet on "American Beet Sugar," recognizes Mr. E. H. Dyer's title to be called the founder of American beet sugar industry. Certainly to our knowledge he held faith in the beet when others lost it; he made sugar profitable when others failed; he invented most important

methods and appliances by which that success was attained. Mr. Holabird cites the case of the Dyers to prove that our beet sugar industry need not be dependent upon foreign skill but can be designed by American engineers and equipped with machinery of American construction. He shows that the Alvarado factory was unsuccessful with machinery of foreign make and under foreign technical management, and as such incompetent. It was then that E. H. Dyer, who still had confidence in the business, believing

ing than would be required for half that capacity; the advantage is, that the plant may be doubled at a minimum cost at any time, an advantage that the owners of every factory that has been built will be glad to avail themselves of. The Alamitos factory was turned over to the owners in complete operation, manned and equipped throughout and running smoothly, and the best of all is that the Clarks bear witness that it has been a financial and commercial success from the start.

PACIFIC RURAL PRESS.

Office, Clark Building No. 330 Market St., San Francisco, Cal.
Telephone, Davis 771.

TWO DOLLARS PER YEAR IN ADVANCE.
Advertising rates made known on application.

Any subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

Registered at S. F. Postoffice as second-class mail matter.

ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, April 2, 1898.

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The Week.

The following data for the week ending 5 A. M., Wednesday, Mar. 30, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week... | Total Seasonal Rainfall to Date... | Total Seasonal Rainfall Last Year to Same Date... | Average Seasonal Rainfall to Date... | Minimum Temperature for the Week... | Maximum Temperature for the Week... |
|----------------------|--------------------------------|------------------------------------|---|--------------------------------------|-------------------------------------|-------------------------------------|
| Eureka..... | .80 | 28.53 | 45.33 | 38.10 | 32 | 52 |
| Red Bluff..... | .70 | 12.08 | 22.91 | 21.90 | 30 | 74 |
| Sacramento..... | .04 | 8.55 | 17.01 | 17.35 | 32 | 72 |
| San Francisco..... | .04 | 7.56 | 22.29 | 20.33 | 41 | 67 |
| Fresno..... | .30 | 4.01 | 10.22 | 8.54 | 34 | 72 |
| San Luis Obispo..... | .60 | 6.05 | 30.53 | ..... | 28 | 76 |
| Los Angeles..... | .24 | 5.26 | 16.74 | 15.30 | 36 | 78 |
| San Diego..... | .18 | 4.10 | 11.64 | 9.47 | 42 | 73 |
| Yuma..... | .00 | 1.65 | 5.35 | 2.93 | 34 | 76 |

The Produce Markets.

The California produce markets continue to be almost wholly dominated by the weather outlook. Wheat is \$1 a ton higher than last week on the weather basis, in spite of the fact that futures in Liverpool are lower and that the Spanish war scare has had a depressing effect upon the export trade. Barley and oats have shared the same influences and are proportionately advanced upon last week's quotations. Hay has gained another dollar per ton, and now a choice article of wheat hay sells readily for \$24 per ton—40% or more in excess of the normal price. One can hear any kind of hay talk in San Francisco, and predictions of \$35 or \$40 a ton have been confidently made. But this is ridiculous. Timothy hay from Oregon can be laid down in this market at \$20 per ton at a profit, and the supply is likely to be equal to any demand which may arise. The weekly consumption of hay in San Francisco is about 3000 tons in normal times; but it would probably be less under excessive prices, and the amount is easily within the capacity of Oregon and Washington to supply. The same may also be said of other feedstuffs. However, there is not likely to be any serious deficiency in the local supplies. The season promises indeed to be very dry, but it will be far from a famine year. There will be nothing to make famine prices; and whoever counts upon them will, no doubt, suffer a miscarriage of his calculations.

Apricots are stiffer, due to frosts which are supposed to have injured the crop prospects. The same is true of almonds. Peaches too are a little firmer; but in other lines of dried fruit there is no change. There continues to be a pretty steady movement, though the market generally may be called very dull. One shipment of 80,000 pounds went north by the last Victoria steamer, bound for Minneapolis by the northern route. In the fresh fruit market apples

continue in plentiful supply. Oranges are a glut in the market and are being sacrificed at auction. A few shipments of strawberries have been received, but mostly unripe and hardly fit to eat. Honey, under weather influences, is firm.

In the live stock market hogs are also steady; but there is no quotable change in beef or mutton.

Weather and Crops.

SUMMARY OF THE REPORT OF THE U. S. WEATHER SERVICE FOR THE WEEK ENDING MARCH 28, 1898.

General Summary.

The week was very unfavorable despite the rain of the 26th. Injurious frosts and low temperatures did further harm to orchards already badly damaged. Throughout the State the average temperature was from 5° to 9° lower than the normal for this period. On the 23d, 26th and 27th the minimum temperatures were near or below freezing over almost all of the State, excepting the extreme south and the immediate coast.

The rain of Friday and Friday night improved feed in southern California, the upper San Joaquin valley and in the coast region south of San Francisco. Grain prospects were also improved, especially in the upper San Joaquin valley, but in many portions it was already beyond recovery. In many portions of the Sacramento valley the grain was injured by the north winds and frosts, the ground becoming very dry. Generally speaking, the outlook for grain is poor.

Throughout almost the entire State, frost is reported to have caused great injury to deciduous fruit. Apricots and almonds have been killed in many sections and early blossoming peaches seriously injured. Prunes were probably not far enough advanced to receive much injury. Walnuts and blossoming oranges were hurt to some extent in portions of southern California.

SACRAMENTO.—Unfavorable reports from every inquiry relative to fruit prospects. North winds and frosts daily. Asparagus yield from this section will be about half a crop, on account of lack of moisture.

BUTTE.—Strong northwest winds. Outlook for fruit poor. Grain fields holding their own. Feather river only two inches above the lowest stage last summer. Orchardists irrigating.

YUBA.—Frosts of early part of week affected the grain, but no permanent injury. Almonds and apricots gone; a few peaches on the top branches, but lower branches seriously hurt.

GLENN.—Cold north winds and heavy frosts. Growing grain failing fast. Some farmers have quit plowing, on account of ground being too dry.

YOLO.—Heavy north wind followed by heavy frosts. Almonds, apricots and peaches badly damaged. Uplands better. Ground dry. Rain needed.

COLUSA.—Frost has bitten the grass some and retards growth. Grain in foothills is of good color, and with rain will make crop. Dry soil.

SOLANO.—Frosts damaged fruit; cherries badly hurt. Ground drying out fast. Rains necessary to insure future healthy crop.

PLACER.—Heavy north winds. Ground too dry to plow. Grain needs rain. Fruit nearly all killed.

SAN JOAQUIN.—Some rain and some frosts. Rain helped grain greatly. Fruit badly damaged.

MERCED.—Best soaking rain of the season on Friday, which will keep grain growing for some time. With a few more such showers grain may yet make some kind of a crop.

STANISLAUS.—Crops and feed looking better. Heavy frost. Fruit badly hurt. Outlook favorable for half crop of grain or more inside canal district.

KERN.—Dry lands received a fine wetting and crops look well.

FRESNO.—Continued frosts have damaged fruit. Rain on 25th helped wheat. Shearing begins this week.

KINGS.—Heavy frosts; fruit seriously damaged. Light showers helped grain a little.

TULARE.—Rain benefited feed and grain on irrigated lands. Prunes not so badly damaged as anticipated; apricots and peaches killed. Prospect for grain more encouraging.

SONOMA.—Cold north winds, with heavy frosts. Prunes safe so far, but orchardists claim that peaches, apricots and cherries will be nearly a total failure.

NAPA.—Heavy frosts. Apricots and peaches nearly all gone. Cherries and pears badly damaged on low lands and some in sheltered places; prunes badly damaged; wine grapes damaged slightly. Good grain and hay crop.

ALAMEDA.—Apricots and almonds nearly all destroyed by frost. Vegetables will be about two-thirds of a crop.

LAKE.—Almonds, apricots and nearly all of peaches damaged. Ground is hard and grain is suffering. Plowing difficult.

SANTA CRUZ.—Heavy rain Friday was of great benefit to growing grain and grass, which are doing well. Killing frosts during the week. All apricots destroyed; peaches badly injured, if not altogether destroyed. Young prune trees in bud and bloom earlier than old trees; badly nipped. Old prune trees not materially damaged.

SAN BENITO.—Heavy frosts have done much damage. Rain on Friday was of great benefit to grain not already dead.

MONTEREY.—Co. St. with heavy north winds until the rain of 25th, which has insured a good crop of hay and probably grain.

SAN LUIS OBISPO.—Cold and frosty. Some damage by wind to crops and by frost to fruit trees. Rain helped crops some, but much was past recovery. Rain badly needed. Friday's rain improved feed, with some hopes for light hay crop.

SANTA BARBARA.—Heavy rain, followed by drying winds.

LOS ANGELES (Bassett).—Heavy rain. One-fourth of walnut crop killed by frost. (Duarte). Cloudy and cold, with rain Friday. Orange shipments continue. (Los Angeles). Light rain Friday did little good, as it was followed by wind. Hay and grain will be very light. Deciduous fruit not hurt. (Palmdale). Heavy rain; frost every night. Almonds all ruined, and most of apricots. (Pomona). Light rain Friday. Deciduous fruit hurt by frost.

VENTURA.—No further damage by frost. Unirrigated lands and stock ranges suffering from rain.

ORANGE.—Light showers, with cold winds. Crops suffering from rain.

SAN BERNARDINO.—Light rain helped grain, but more is needed, or not even hay will be made. Fruit damaged.

RIVERSIDE.—Frosts damaged deciduous fruit, and also touched orange blossoms in exposed places. Friday's rain made prospects for hay better. Grain crop will be light.

SAN DIEGO.—Cool. Grain and feed growing slowly. Fruit apparently uninjured.

LOS ANGELES SUMMARY.—Frequent heavy frosts injured fruit blossoms. Almonds, apricots, peaches and nectarines killed in localities. Other sections report huds badly damaged, but extent not yet known. Rain temporarily beneficial.

EUREKA SUMMARY.—Little damage reported from frosts: confined to cherry and peach trees. Grain and pasture conditions uniformly favorable, although retarded somewhat by frost and north winds.

Ventura Weather and Crops.

TO THE EDITOR:—Under the head of "Weather and Crops" in your issue of even date you refer to a dispatch from the New York Journal of Commerce, and to the apparent opinion of the "handler of California fruits." The cry of "Wolf!" is, as usual, heralded Eastward. I wish to reiterate your senti-

ments; he will find "too much wolf" before the end of the season. Reports coming from reliable sources—for instance, Mr. Berry of Visalia—indicate a total failure, and others are coming in from all the important fruit growing districts. And now come reports from Santa Clara valley of disastrous results of the freeze of apricots and other varieties. I can cite orchards in this county which are a total loss, and others decidedly in doubt as to the outcome. The fact is, the apricot crop has been substantially frozen out, notwithstanding to the contrary the opinion of the would-be "handler of California fruits." If he expects to buy any cheap fruit this season, I would suggest that he pass Ventura county. Coupled with the dry year, he may get left on the bean proposition, too. The "wolf" will have close picking on fruit, beans and barley. His "bark" is at the other end of the line this year.

Ventura.

N. B. SMITH.

Notes From the South.

The preliminary arrangements for the forthcoming Fruit Growers' Convention, to be held in this section under the auspices of the State Board of Horticulture, are now well under way. Secretary Frank Wiggins of the Los Angeles Chamber of Commerce has the programme well in hand, and, while not far enough along to go to the printer, it is nevertheless about complete. The list of names includes such prominent people as the Hon. Abbot Kinney, Dr. Powers, A. H. Naftser, Hon. Ellwood Cooper, Philo Hersey, Prof. A. R. Sprague and others equally conspicuous in the realms of horticulture and the allied industries. The railroads have granted a one-and-a-third-fare during the convention. The first two days' session—April 11 and 12—will be held in the rooms of the Los Angeles Chamber of Commerce, and the last two days—April 13 and 14—in Riverside. Should there be a strong demand for meetings in other localities, adjourned sessions may be held later elsewhere.

The coming series of Farmers' Institutes to be held in southern California will be in session while this issue of the RURAL PRESS is being printed. The first of the series will hold forth at Westminster, in Orange county, on March 31, to be followed by sessions in Escondido, San Diego county, April 1 and 2; Compton, Los Angeles county, April 4; and Chino, San Bernardino county, April 5. The Institute movement is now well established hereabouts, and each and every session draws good attendance. The University Agricultural College will be well represented at each session.

On May 5 and 6 the spring meeting of the Southern California Pomological Society will take place in Orange. This is now the oldest society of fruit growers in the State, and at the same time one of the best. Its educational influence during the past fifteen years has been most pronounced. The meetings have always been well attended, and the coming one will be no exception to the rule. A strong local committee is already in the field doing missionary labor. Orange county hospitality, Orange county hustle and Orange county brains can be depended on to get up a rousing feast for the mind and a generous flow of soul. Of course you will be there, if within reaching distance.

So far the effort inaugurated a few weeks ago to secure a reduction in present freight rates on oranges and lemons has not been prolific of results. As was anticipated, the railroads move slowly in such matters, if at all. The reason is obvious. The Western Traffic Association must first be consulted, and unless the local interests are favorable to such action, but little progress is possible. Besides, Pres. Ripley of the Santa Fe is reported to have given a negative reply to a similar request coming from San Diego. It is indeed, after all, an open question if an emergency rate or a temporary reduction would afford the much desired relief. It seems to me it would only result in an immense volume of fruit going forward, with the usual results of glutted markets and low prices. To meet foreign competition in the New York and other Atlantic coast markets the reduction would have to be considerable—so much that the transportation companies would not consider it at all. Much of the demoralization of the market is due to other causes than excessive freight rates, though a permanent reduction would undoubtedly do much to relieve the present congestion. In spite of these drawbacks, however, fancy fruit is going forward in fair quantities. Lemons rule steady for choice fruit.

Rain? That is rather a troublesome interrogation just at present. For a dry season it could have been worse with less rainfall, but, like Mercutio's wound, "it will do." During the past fortnight about half an inch has fallen; but these intermittent showers have invariably been followed by cold and drying winds. The consequence has been a total absence of "growing weather." Beet and field planting generally has been sadly neglected; hay stocks are light, with no anxious sellers, and prices going up; grazing is very scant, and the outlook not inviting. In addition, the cold weather experienced has been unprecedented in its duration, and orchard crops have also suffered in a corresponding degree. Mark Twain somewhere has said that "a lean

pantry makes a tedious Sunday." So also does a season of scant rainfall make a tedious summer.

What T. H. B. Chamblin has accomplished for the orange growers, in perfecting their organizations of exchanges, Prof. A. R. Sprague is gradually bringing about for the growers of deciduous fruits. Up to the present he has visited every deciduous fruit producing section in each county, with the single exception of San Diego county. On the whole, results have been gratifying. Some twenty corporations have been formed, each with a capital stock varying from a few thousand dollars and upwards. Of this capitalization a sufficient sum will be called in to place each organization on a strong basis. The matter of a head or central exchange is now well under way, with headquarters in Los Angeles. This whole movement is a step in the right direction, and it is a pleasure to see the growers keenly alive to its importance. As a result, there is being evinced a unity of action and a continuity of purpose that insures success. Not only is co-operation essential in the matter of securing better prices, but much is to be done in the way of uniform grading and packing, in the way of exploiting new markets, and presenting our dried fruits in pleasing and economic packages. If "the way to a man's heart is through his stomach," then the way to reach the Eastern consumer of California dried fruit is first to please the eye and then the stomach. This having once been accomplished, other things being equal, rest assured a regular customer has been secured. Neat and pleasing packages, a uniform standard of excellence, systematic methods in pushing out for trade, are a few factors to be observed in augmenting the markets for a constantly growing supply of orchard products. Brain, brawn and bank are the triumvirate to accomplish magnificent results even in a dry season; let's have a goodly supply of all three.

With the advent of increased production and keener competition, our agriculture and horticulture is becoming more diversified as the seasons roll round. The latest evidence of this fact has been the establishment of a rabbit-breeding farm on the outskirts of South Pasadena. Here the nucleus of a somewhat pretentious farm has been started, consisting of about 600 bunnies of the best varieties and strains. They will be bred for their skins, for coursing purposes—a sport that has become quite popular in this country, and for pet stock. The idea of breeding rabbits must strike a Fresno farmer as the height of folly. Verily, "there are more things in heaven and earth, Horatio, than are dreamt of in your philosophy."

HENRY W. KRUCKEBERG.

Los Angeles, March 29th, 1898.

AGRICULTURAL REVIEW.

CALIFORNIA.

Alameda.

ALTAMONT NOTES.—The north wind is blowing here at the rate of 100 miles an hour. The grain is nearly all blown away. The feathers have been blown from all the chickens, and even the hills are crowded toward the south. * * * One hundred head of horses passed through here to-day going to Livermore valley for pasture. The horses are from the vicinity of Tracy. There is no feed and no crops on the west side, and cattle and horses have to be sent away to keep them from starving. * * * Quite a number of stock buyers have been around Altamont trying to buy stock cattle at hard-time prices. But the farmers have not given up all hope yet and refuse to sell.—Livermore Herald.

Butte.

GRIDLEY CANNERY.—Although the damage by frost has been very severe, there is no doubt that there will be abundant fruit to run the Gridley cannery. Orchardists say that, while some varieties of peaches have been hit hard, and practically annihilated, there will remain enough to supply our cannery for a full-handed run during the season. A full crop would mean more fruit than ten canneries could take care of.—Gridley Herald.

Colusa.

WILL S. GREEN of the Colusa Sun says that the Sacramento valley has had but one full crop—1880—in fifty years. Mr. Green has spent a great deal of time and money in an effort to get Colusa and Glenn county farmers interested in a plan for utilizing the water of the Sacramento river for irrigation. His pet notion—and it's a good, sound, sensible one—is to use a barge, on which shall be placed a huge pumping plant. From this it is proposed to distribute water over the adjoining lands, the barge moving up and down the river as different sections required irrigating. He very aptly and truthfully says: "The cost of water compared with its benefits is so infinitesimal that it is not worth taking into account. A pumping plant company can grow rich putting water on land along the river 10 inches deep at \$1.50 an acre."—Gridley Herald.

Contra Costa.

EXCEPTING the hillside orchards, the damage by frost has been general and very severe, although its extent cannot yet be ascertained. The apricot and the almond crop, however, will be the principal sufferers. It seems to be the same old story that has been repeated year after year with only an occasional exception—of betting against nature and giving heavy odds and losing. And as J. D. Smith expressed it the other day, it only differs from playing the races in that the man who plays the races loses his reputation as well as his money. The time must come, and the sooner the better, when the fruit trees in this valley shall give way to safer if not more profitable lines of agriculture. We are so situated geographically that fruit is in almost inevitable peril from frost during the early spring, and what the frost leaves, the codlin moth gets away with. We hope to see the day when the alluring but deceptive fruit trees are removed from our valley ranches, and the lands sown to sugar beets and grain and devoted to stock raising and dairying—purposes to which they are far better adapted.—Danville Sentinel.

Fresno.

The shipments of live stock from this station during the past year were as follows: Hogs, 56 carloads; sheep, 7; cattle, 12; total, 75. The live stock industry has waned for several years past, owing to low prices, and now that prices have gone up so as to make it profitable to raise stock along the

foothills of this county, the producer is confronted with a scarcity of feed which threatens to decimate the herds.—Sanger Herald.

Los Angeles.

CITRUS FRUITS AND FREIGHT RATES.—The deplorable condition of the citrus-fruit industry, as a result of the combination and discrimination of the Santa Fe and Southern Pacific Railroads, is commented upon by one of the heaviest shippers of this section. He is one of a committee appointed to confer with the railroads in the effort to obtain a reduction, and therefore withholds his name. He says: "Take the lemon situation here and elsewhere in southern California, and it is desperate indeed. Since November 1st at least 100 carloads of fine lemons have gone to waste in this section alone, simply because the growers did not dare take the risk of excessive rates to the East, guaranteeing the railroad company against loss, while pocketing all losses themselves. The margin of possible profit was too small to face this risk. If the railroads would share part of the risk, it would be different."—Los Angeles Times.

FRUIT CANNERY TALK.—There is on at Downey City a fruit-cannery agitation, and in connection with it some talk of offering a bonus. To this the *Champion* does not assent. It says: "When the *Champion* a few years ago advocated the establishment of a creamery in this place the outlook for the business was not as favorable as the present outlook for canning fruit and vegetables. The creamery business from a small beginning has proved a successful and most fortunate enterprise for the people of this vicinity. The fruit and vegetable canning industry can be made just as profitable here. The people of this town wisely refused to give a subsidy to get a creamery started. The original proprietors of the Downey Creamery had the money they put into the business at stake and energetically went to work to make the industry a success. The business has so increased that others have engaged in similar enterprises. The canning business offers just such favorable inducements to the experienced fruit canner who has the means to commence in a small way."

Monterey.

HEAVY IRRIGATION WORK.—As the water in the Salinas river has failed to flow into the ditches in sufficient quantities to be of much use, the Spreckels Company decided, after investigating, that there is plenty of water in the river bed flowing under the sand. With this idea uppermost, they are now putting in a large pumping plant, expecting to grow a crop of beets by irrigation this season. For this purpose a well 100 feet long, 25 feet wide and 30 feet deep is being excavated just below the bridge and within 60 feet of the river. Piling, to be lined with grooved boards, is being driven on each side of the well 40 feet into the ground. It is hoped that sufficient water will flow into this well from the underground current of the river to supply three large centrifugal pumps of 21,000 gallons per minute. The pumps are to be driven by three large engines supplied with steam by eight boilers. The entire cost of the plant will be between \$40,000 and \$50,000.—Salinas Index.

Orange.

E. H. McPHERSON of McPherson, Orange county, was in the city recently making arrangements to take about 700 head of horses to the mountain meadows of Inyo county for pasture during the coming summer. In view of the shortage of feed and the lack of farm work, owing to the drouth, farmers will drive their surplus horses to the ranges for the summer. Mr. McPherson has already made arrangements for pasturing about 300 horses from the San Joaquin ranch in Orange county, and he expects to secure as many more from this county. They will either be driven all the way to Inyo county or shipped to Mojave by rail and driven thence across the desert to the mountains.—Times.

DRY SEASON AND BEET CULTURE.—The dry spell will have its good effects with a large number of beet raisers, who will this year devote more time to the cultivation of their land for beet raising, which is highly essential in this industry. In former years the rainfall has been of such volume as not to compel the beet raiser to till the soil as thoroughly as he would otherwise do to produce a crop, while this season will afford ample opportunity for the pulverizing of the soil. However, the area set to beets this year will not be large, but those maturing will no doubt be of rich quality, should a few April showers intervene, which is not at all unlikely.—Anaheim Gazette.

LOTS OF FRUIT LEFT.—Despite the reports of the disastrous effects of the recent frosts, all the fruit is not killed. A. E. Stickland, W. B. Shepherd, R. H. Rhodes, H. P. Austin, Frank Buck and others in Pleasant valley report little damage except to apricots, and these named will have more 'cots than they had last year. The Rippey place, west of town, is not hurt much. G. W. Hinkley, at Sky High, was hardly hurt at all. Henry Brinck's orchard was not nearly so badly damaged as at first reported, and it is now believed that in a great many orchards there will be fair crops of pears and plums, plenty of Tragedy pears and some peaches. The upper Sackett place is scarcely hurt at all. George Worth reports plenty of fruit, even apricots, and all the highland orchards are all right. J. E. Sackett has made a careful examination of the orchards west of town, and he says that the loss is not as heavy as generally believed. In some of them there is a second bloom of apricots that may mature, and many of them will have a fair crop of peaches. There will also be plenty of plums and pears, and quite a number of orchards show plenty of apricots.—Winters Express.

San Bernardino.

SOUTHERN BEET NOTES.—In an interview yesterday with Mr. Ruopp, agricultural superintendent of the factory, he told us that there were planted up to last Saturday on the Chino ranch 750 acres; at Anaheim 1370 acres, and at Florence 1090—a total of 3210 acres tributary to this factory. Last year at this date there were 2686 acres planted, including Huene, which was then tributary to this factory. The planting is therefore much further advanced than it was one year ago. But twenty acres have yet been replanted. Thinning is just ready to commence. At Anaheim there are 155 acres ready to thin, at Florence 75, and on the Chino ranch one or two fields. There have been plowed for beets to date at Chino 4200 acres, at Anaheim 2700, and Florence 2000 acres. Mr. Ruopp says that unless we have an inch or more of rain he expects no crop from Anaheim. Florence is in a better condition to withstand drought. He takes a more encouraging view of the conditions at Chino. He says that this ranch is better suited to withstand drought than any of the beet-growing sections. If we shall yet get some spring showers there will be but a small acreage under contract not planted; though of course the yield must be expected to be light on some of the land. He advises the farmers to continue working the soil and keep it thoroughly pulverized, so that it will retain all the moisture there is and absorb what may yet fall.—Chino Champion, March 25th.

WEATHER TALK.—For the past nine years the average rainfall, after the first day of April, was 1.09 inches. For the nine years previous to that, the rainfall averaged 3.45 inches. For the previous period of nine years, the rainfall averaged .93 inches. The second period of nine years above referred to contained the phenomenal rainfall of 5.04 inches for April, May and June, in 1880, and the still greater phenomenon of 9.44 inches for a like period in 1884. The rainfall for the months of April, May and June of 1897 was .77 inches; for 1896, 1.21; 1895, 1.94; 1894, .89; 1893, .26; 1892, .13. From these figures it would seem as if an inch or two is all we can

reasonably hope for the balance of the season. Yet there have been nine seasons since 1871 when we had over 2 inches, and two seasons when we have exceeded 5 inches, and one season when we exceeded 9 inches after April 1. There is but cold comfort in this, however. In the last ten years the proportional rainfall of the season that fell after April 1 was: 1889, 1-11; '90, 1-30; '91, $\frac{1}{4}$; '92, 1-100; '93, 1-64; '94, 1-11; '95, 1-11; '96, 1-7; '97, 1-28. As our rainfall this season up to date only amounts to 7.63 inches, it will be readily gathered that showers to the amount of about 1 inch is rather above an average of the above years. There is no use in getting excited or scared over the outlook. We are better prepared to stand a dry year than we were fifteen or twenty years ago. We know better how to conserve the moisture we have in the ground. We know better how to economize in the use of water. We are not going to "dry out," even if we get no rain from now to next October or November. We will be able to pull our orchards through in fairly good shape. If the deciduous trees have any sound blossoms or fruit on now, it will mature anyway. The worst possible evil will be a lack of fruit on the orange trees next season, that's all.—Redlands Citograph.

San Joaquin.

ROAD MAKING ON TULE LANDS.—A Stockton engineer named Fisher is making an experiment the result of which will be of interest to all the tule land regions. If the experiment is successful, he will build a roadway across the tule lands between Stockton and the Contra Costa hills. His plan is to make an earth embankment of fascines laid over the soft, muddy tule ground. He has just finished putting on two more harges of sand on the experimental piece made several weeks ago, and he says it stands the pressure so perfectly that he no longer has doubts of the success of the experiment.—Rio Vista News.

Santa Clara.

It is yet too early to say to what extent the fruit crop has been damaged by frost. Every year there is talk about the crops being ruined, and each year these reports prove to be canards, to a greater or lesser extent, and the same may be true this year of apricots and peaches, which are now reported to be badly damaged. Last year, for instance, even so late as May 1st, the report was current that the prune crop was badly damaged by frost, and it was estimated by good judges that the pack would not be heavier than that of 1896. Nevertheless the shipments of dried prunes of pack of 1897 up to last Saturday night amounted to 54,053,900 pounds, with between 4,000,000 and 6,000,000 pounds yet to go forward, against a total for 1896 of 38,005,340 pounds. This shows how little evidence can be placed in estimates of damage, as a rule, and it is hoped that this season may be no exception to the rule, and that, despite reports to the contrary, there will yet be good crops of all varieties of fruit.—San Jose Mercury, March 29th.

CROP PROSPECTS.—The situation as summed up by observers who are entitled to confidence from their knowledge of the subject, is about as follows: The apricot crop is virtually a total loss. The frost has killed the young fruit. Early peaches are about two-thirds gone. Later varieties are all right. Black cherries are badly damaged; the white ones are in better condition, not many of them being out yet. Almonds are in a very bad way and practically used up. Japanese and other varieties of plums are considerably damaged, being in about the same condition as the black cherries. Our main crop, prunes, are in fair condition in this valley, but farther south in the Hollister district they have been badly damaged. The remaining question is how far the existing damage may be modified by more favorable weather, which now seems to be at hand. We realize that farmers are much given to taking the worst view of crop prospects. It is also true that the above statements were made just before the change in the weather and when no such change was in sight. It is quite possible that a week hence we will have more favorable reports on all sides. Even on this presentation, it appears that the crop on which this valley relies more than any other for its prosperity, is in reasonably good condition, and may prove in still better case with rain and weather.—San Jose Herald, March 25th.

Santa Cruz.

PAJARO VALLEY FRUIT NOTES.—The heavy frosts have set back the strawberry crop from two to three weeks. * * * Peach-tree borer is a more serious pest than San Jose scale in Santa Clara county. * * * Five hundred and fifty tons—over 1,100,000 pounds—more of apples than of any other green fruit has been shipped from San Jose since last July. The total apple shipments from San Jose for the season, up to March 12th, reached 9,462,220 pounds—over 473 tons, or nearly 320 carloads. With the exception of a few cars, this fruit was sent from Pajaro valley and shipped from Watsonville. It is not strange that our growers feel that Watsonville should be a terminal point. The fruit gains no credit by being designated from San Jose.—Pajaronian.

Sonoma.

HARD ON THE HOGS.—Said a well known Dry creek valley rancher Monday: "The fruit is not the only thing damaged as a result of the frost, but the acorn crop as well I fear is a failure. The trees were in full bloom at the time of the frost and I have noticed since that Jack Frost's imprint is plainly visible. I would have rather lost \$200 than the acorn crop off my ranch."—Cloverdale Reveille.

Sutter.

CROP OUTLOOK.—The cold weather, while putting a "ragged edge" on the grain, has not injured it to speak of, and all over the county the crops look well. More rain is needed in some places, as the north wind has had a very drying effect; but considerable drouth can be stood for several weeks yet without material damage. In places barley and wheat will soon head out, and in some fields the rank growth has caused the grain to lodge considerably. The latest sown grain on the high land needs more moisture to insure a crop, but the rest is not suffering.—Sutter Farmer, March 25th.

Tulare.

PRUNING AND FROST.—Major C. J. Berry writes as follows in the *Tulare Register*: "During the period between March 14th and 19th there has been very 'anxious' weather for a fruit grower—the staple productive varieties have all been in full bloom and the extreme cold nights prevailing must necessarily have caused any fruit grower great anxiety. There has been a great lesson given the fruit grower during this trying cold weather. March 14th, ice was made in the ponds and troughs, temperature 27 degrees; March 15th, severe frost but no ice; March 16th, ditto; March 17th, ice was formed again; March 18th, ice was formed hard, temperature 25 degrees; March 19th, no ice, but temperature was 27 degrees at 4 A. M. Out of this severe trial came many fruit growers wounded unto death. The writer presents himself before you with a splendid crop of fruit, uninjured materially by the severe cold weather prevailing this week. Now for the cause of my 'luck.' It has been a very dry season. I began to cultivate two months ago and I expect to keep it up all this season. I did not de-vitalize my trees by cutting their heads off in the winter. I never do the top pruning until the cold weather is surely over—along in May—so to sum up the case I fed my trees with cultivation, the next best thing to rain, and did not undo their efforts to treat me with a crop by cutting their heads off."

Gov. Budd has appointed Adjutant General A. W. Barrett a member of the State Board of Agriculture, vice Richard Gird, term expired.

CEREAL CROPS.

Cereals in Southern California.

Olin L. Livesey, of Fairmont, in the Los Angeles *Cultivator* holds that California has more and better facilities for raising grain than any other section of this great country. Its mild winters allow continuous work through those months which, in most other States, are spent chiefly in trying to keep comfortably warm. Its dry summers enable the farmer to harvest and ship the crop without any shelter or regard to weather. The interior valleys grow wheat that is whiter, brighter and thinner skinned than any raised elsewhere.

Long Working Season.—Nowhere in the world can one man with his team work as many acres as can be worked here in southern California. Seeding can be begun about October 1st—winter plowing and seeding begins usually about December 1st, then comes the summer fallowing. Soon after this is done, mowing begins, and by the time the hay is in the barn or is baled, it is time to start the harvester, and if the ranch is not near the railroad, by the time the grain is hauled and shipped, it will be well if there are two weeks left in September for our rancher to spend with his family at the seashore.

A sufficient rainfall every season, and a fair price for the product, would make wheat raising in California a most attractive industry—but such a dead-sure thing does not often fall to the lot of those who wrestle with nature. They must take it as it comes and make the best of it. In this great and important industry, the question now is, how can it be conducted so as to return a reasonable income for the capital invested and the labor expended?

Best Methods.—I have been asked to give some results of experience and observations, and outline the best method of raising wheat. It does not often fall to our lot to do things just as we would like to do them. We cannot control all the surrounding circumstances and often the very best we can do is far away from the ideal plan upon which we want to work. The conditions with which I am familiar and of which I will speak for a few moments are such as exist in the extreme west end of Antelope valley, Newhall valley, San Fernando valley and the vicinity of Banning and Beaumont.

In these valleys we have level land and a soil of sandy loam, composed mostly of decomposed granite, and easy to work. We have a rainfall of from 12 to 20 inches and no irrigation for grain. Under these conditions the best results can be obtained by having a third of the ranch summer fallowed ready to seed early in the fall—a third to be plowed and seeded after the first rain and the remaining third to be summer fallowed for the next season.

A Gamble.—If you want to put in the utmost acreage and are willing to "gamble" some, you can have a quarter of the ranch in dry plowing (on last winter's wet plowing,) a quarter in summer fallow to seed, a quarter for wet plowing and the remaining quarter to summer fallow for next year.

The summer fallow can always be relied on for at least a fair crop, usually it will yield a bountiful harvest. The wet plowing will do well in an ordinary year, the dry plowing sometimes a fine crop and sometimes it makes only a pasture. For tools, I believe the best to use for plowing and seeding are the wood frame five or seven gang plow, 8-inch shares and six or eight animals. The plow to have a good rear seeder and a small harrow behind it. The ground should be plowed not less than 2 inches—not over 3 inches. In this way the seed will lie on the solid ground in the bottom of the furrow with soft plowed dirt for a mulch over it. If it is not cultivated, soil will dry out as deep as it is plowed. Wheat will not come up and give a good stand if planted much over 3 inches deep. With the seed on the hard dirt, with 3 inches condition for the retention of moisture and full growth of the grain, another harrowing may be beneficial if it can be given just at the right time—it may be necessary if the land crusts after a rain. I would put in a dry plowing, wet plowing, and summer fallow this way. I would not use any drill of any kind for wheat or barley.

Summer Fallow.—Plowing for summer fallow is an entirely different matter. Put on more stock on the gangs or use iron frame plows and run them at least 6 inches deep—deeper if you can. Each plowing should be across the last, if possible, and not in the same direction. The summer fallow must be deep and kept clear of all weeds. It should be harrowed as fast as plowed and then gone over with some large weed cutter as often as necessary to keep it clean of weeds. Cross plowing about 4 inches deep in the late spring is beneficial. In short, summer fallow should be treated just like an orchard. As an illustration, I would cite a case within my own knowledge. In a year when most crops failed for lack of rain, a strip of wheat 8 feet wide was put between rows of small trees, where the ground had been cultivated two years, the trees being 24 feet apart. The orchard contained 300 acres, making the wheat acreage 100

acres. Off these strips the owner filled his own barn with loose hay, fed the horses on the baler and had over 200 tons of baled hay to sell. I believe this to have been at least eight times as good as the average crop of winter sowing in this same vicinity that year.

Seed.—Have good clean seed. In our vicinity Sonora and White Australian are the best. Club is apt to burn. Don't fail to bluestone and make it strong—at least a pound to a sack. It may not always entirely prevent smut, but I never saw a field bad with smut that had been thoroughly bluestoned. According to my observation, it is better not to sow wheat right after a rain or while the ground is muddy. As to quantity, thirty to sixty pounds to the acre will give the best results with us. Should be thick enough to make a good stand—not so thick as to burn.

Think and Act Quickly.—No cast-iron rules can be given. The successful farmer must be quick to take advantage of every chance. I have seen a good crop raised from a field brushed over and harrowed. The previous crop had been a failure and not cut at all. The shrunk wheat was tested and found to sprout, so it was treated as above and yielded a good crop at a small expense. One of the most important questions before the wheat farmer is, how long can this continual cropping of land to the same product be continued? On most of this land there can be no rotation of crops—corn cannot be raised, with profit. In some places barley can be raised, but wheat does not do well and vice versa. Summer fallowing will postpone the day of reckoning, but on the sandy loam soil there must soon come a time when the exhaustion of those elements required for the wheat will materially diminish the crop and make it unremunerative. Who will give us a reasonable remedy? The farmer has his share of anxiety and disappointment, but to the man who loves the bracing air, clear sunshine and the bright blue heaven's great dome better than frescoed ceilings—to him who would rather have his vision bounded by snow-capped peaks and lofty mountains, whose sides are furrowed with deep canyons and fringed with towering pines, rather than marble counters and gilded railings—to him who can find companionship, instruction and amusement in good books and broad thinking—to him who loves to breathe God's free air and be his own master—to these, I say, the somewhat isolated life of the farmer, with all its deprivations, is rather to be chosen than the luxuries of the crowded city.

FRUIT PRESERVATION.

Yield and Cost of Dried Fruits and Prepared Nuts.

By GEORGE H. HUDSON, Manager of the Niles Co-operative Fruit Association, at the University Farmers' Institute at Niles.

The fruit drying season of 1897 opened at the plant of the Niles Co-operative Fruit Association on July 9th with the first receipts of apricots, and closed on Sept. 22nd with last receipts of late peaches (Salways). The first peaches were received on Aug. 2nd; first French prunes on Aug. 10th; first Silver prunes on Aug. 27th. In all there were 1,042,524 pounds of green fruit of different varieties received, apricots heading the list with 551,789 pounds (of which 410,651 pounds were Royals and Blenheims and 141,138 were Moorpark); followed by French prunes, 296,380 pounds, then peaches, Silver prunes, Egg plums, German prunes, Fellenbergs, Robe de Sargent, Washington plums and Bartlett pears, in quantities as named. Fruits were received by the Association from San Leandro, Alvarado, Decoto, Centerville, Sunol and Livermore, in addition to Niles.

Canners' Requirements.—The canners this season were more particular than ever before as to size and quality of fruit—in 'cots, for instance, wanting a Blenheim not smaller than 9 to the pound and a Moorpark not smaller than 7 to the pound, the ruling rate paid by them being \$20 per ton for these sizes, though I know of one contract being made for Moorpark as high as \$35 per ton and another as low as \$12.50; small 'cots running, say, 13 or more to the pound only bringing \$8 to \$10 per ton in the market, and scarcely saleable at all under contract direct to a canner.

Cost of Drying.—The cost of drying on a green ton basis was, on account of the higher price of sulphur, bags, insurance and some other articles used in the curing of the different fruits, a trifle more than in the season of 1896; but the cost per dried ton was considerably more, this being caused by a greater shrinkage in drying in 1897 than in 1896, the average shrinkage of 'cots, for instance, in 1896 being 5 $\frac{1}{10}$, and in 1897 5 $\frac{4}{10}$; and the same may be said in the case of peaches, prunes, etc.

Shrinkage.—The shrinkage varies very much in fruit raised in different orchards sometimes less than a mile apart. Taking 'cots again as an example: In two cases the shrinkage was as high as 5.9 pounds green to 1 pound dried in 'cots large in size (No. 1), grown in low, wet ground, and other cases, in No. 2 grade 'cots, but grown in higher and drier ground,

perhaps, the shrinkage was only from 5.2 to 5.3 pounds green to 1 pound dried. To account for a part of this difference, however, the latter 'cots were sold in early November, whereas the former were not sold till the middle of February.

Prices Received.—The prices received for the dried 'cots were from 5 $\frac{1}{2}$ c to 6 $\frac{1}{2}$ c, according to grade, instead of 8 $\frac{1}{2}$ @9 $\frac{1}{2}$ c, as in 1896, and the average returns from all grades to the grower after all drying expenses were deducted were about \$15.24 per green ton. This is not at all a bad result when it is considered that over two-thirds of the 'cots received were of second grade, of a size too small to contract to a canner.

French Prunes.—In French prunes many sales were made from this section to San Jose at \$19 to as high as \$25 per green ton, and unless these driers had sold early in the season for future delivery, and at high rates, it is a great mystery to me how they came out anywhere even on their green fruit purchases, as the average returns of all the French prunes dried by the association has only netted the growers, after all drying expenses were paid, some \$8.62 per green ton, the average shrinkage being 2.87 pounds green to 1 pound dried. Of course, the San Jose driers have engines and all machinery for the handling of prunes, which our association has not, and so can dry much more cheaply than we can, but not enough cheaper to make up for any such difference as this.

Here in prunes again comes a wide difference in shrinkage, running from 3.08 to 2.75 pounds green to one pound dried, and in one case where the prunes were "rubied" as low as 2.46, whereas in San Jose 2.25 is considered an extra large shrinkage.

Silver Prunes.—Silver prunes netted the growers at the rate of \$32.70 per green ton, against \$48 to \$52 in 1896, being sold at 5 $\frac{1}{2}$ cents per pound against 8 cents in 1896, though I know of two sales of small lots being made early, one at 7 $\frac{1}{2}$ cents, the other at 7 cents, the same fruit being hard to sell to-day at 3 $\frac{1}{2}$ or 4 cents.

Pears.—Of Bartlett pears this year, much to the satisfaction of every one connected with the association, only two small lots of inferior fruit were received, the owner of one lot coming out exactly even and the other 4 cents behind after all drying expenses were paid. I am glad that this is the only account of this nature that I have had to send out, and am inclined to congratulate the recipient that it was no worse.

The cost of drying different fruits is just about the same from one year to another, it costing no more to raise and dry 'cots which sell one year for 10 cents than those which sell another year for 5 cents, and the same, of course, applies to other fruits. There is a big difference, however, in the net returns to the grower. I have mentioned particularly 'cots and French prunes; the same general remarks would apply to peaches, plums and other varieties of prunes.

Almonds.—Mr. W. G. Read of Colusa operated on the drier premises last fall a hulling as well as a shelling machine, the former arriving, however, too late to be of much service for the earlier varieties, such as Paper Shell, Nonpareil, I X L, etc., and quitting too soon for the Languedocs. The sheller, however, did quite a large business, some sixteen tons and over of meats being taken from the shell, the work of both huller and sheller being very satisfactory. In shelling almonds already hulled, 100 pounds of nuts would produce from 48 to 56 pounds of meats, according to variety, a Languedoc running from 48 to 53, Nonpareil and Paper Shell from 54 to 56 pounds.

Sticktights.—Nuts with hulls on, or sticktights, 100 pounds produced from 16 $\frac{1}{2}$ pounds of meats in the case of a lot sent from Livermore of Drake's Seedlings, to 22 $\frac{1}{2}$ pounds for a Languedoc sticktight, the average being about 20 to 21 pounds of meats to 100 pounds of nuts.

Broken Meats.—Of meats broken in the shelling the lowest was 11% in the case of a hulled California Paper Shell to 6% for a hulled Languedoc and in sticktights as high as 8 $\frac{1}{2}$ %. The percentage of broken meats would depend largely upon the condition of the nuts when put through the machine.

Cost of Treatment.—Mr. Read did the work under contract at so much per pound of meats, this year the price being 2 cents per pound for a hulled nut and 3 cents per pound for a sticktight, this price including the picking out by hand of all broken meats.

For hulling alone the charge was \$15 per ton, the weight of the hulled nuts to be taken after they were dried.

Orchard Yields.—In closing, an interesting comparison as to increase in bearing of an orchard from year to year is shown in one case—a young French prune orchard produced, in 1895, 10,827 pounds green; in 1896, 21,573 pounds; in 1897, 45,546 pounds. Another case, French prunes also, 1896, 4195 pounds; in 1897, 43,038 pounds. To show even bearing in the case of an old prune orchard: In 1894, 62,165 pounds; in 1895, 41,831 pounds; in 1896, 64,432 pounds; in 1897, 62,149 pounds. On the other hand, a Silver prune orchard: In 1894, 24,022 pounds; in 1895, almost total failure; in 1896, 2276 pounds; in 1897, 5040 pounds—all pounds green weight.

THE STABLE.

Form in the Saddle.

In California, usually, we have a sort of a wild Western way of riding and, except in a few instances, perhaps, do not give attention enough to the correct thing in arraying ourselves for the saddle. It will be well, then, to give some attention to saddle fashions, so as to be fully informed when the next good year makes it possible to buy some new clothes.

At a recent meeting of the Centaur Equestrian Club of Chicago Mr. Mortimer Levering, who seems to be a leader of the 400 in saddledom, read a paper on "Form in Equestrian Dress and Equipment," which may safely be taken as a guide by all who wish to depart from cowboy standards.

The Philosophy of the Thing.—To be in "good form," whether on horseback, at the theater, at the reception, at dinner or at business, is an evidence of good manners, a consideration of details, a respect to higher civilization, the assurance of gentility, and, best of all, a high regard to one's associates and a satisfaction in self-respect. For a man or woman to seek information as to correct dress, suitable appointments or proper equipments for any function is not at all foppishness, priggishness or ostentation, as some critics are disposed to venture the assertion. On the other hand, the person who is indifferent to the "appearance of things" is apt to be of a vulgar mind; the sunshine of refinement has not illumined his dark, benighted, uncivilized nature.

It is commonly said by careless, lazy people that "clothes do not make the man." That saying is a relic of backwoodism, of pioneerism, of times when people were content with mud roads or blazed paths through the forests, of illiteracy, of a nature unshaven, unkempt and unwashed. Such people were wont to ride equipped as Shakespeare describes: "Hipped with an old mothy saddle and stirrups of no kindred." An old saying by one of the great Greek philosophers was: "A man's reception is according to his dress and his dismissal according to his sense." If we might make a new proposition on that line it would be: A man's reception is according to his sense in dress and his dismissal according to his information. It is not easy to deceive people of our time as to what is right and proper, and they are very often obliged to tolerate and excuse things that shock their sense of propriety. My subject deals particularly with what is *de rigueur* for horseback riding.

No king sitting on his throne can be more an object of attention than is a man or woman riding on a horse. No sight so keenly awakens in the breast of the observer a spirit of envy as when he sees a properly dressed figure on a well mannered horse. From the conspicuous position of riders invariably their dress and appointments are carefully scrutinized and criticised. It is not essential that the rider's dress and appointments be expensive or elaborate, but rather that every detail be severely plain and of utility.

Classes.—Equestrianism being divided into several classes, each particular one demands its peculiar style or "form." These forms are not the result of fancy or fashion, but each based upon a practical requirement in the proper comfort and safety of the equestrian. The principal classes to be observed are for park riding, cross country riding, high school riding and indoor riding, business or long distance riding, and military or parade riding. Every lady or gentleman who owns a saddle horse, or who rides for health or pleasure, should possess three riding habits or suits, saddles, bridles, crop and whips, according to the different styles of riding they may wish to take part in.

Saddles and Bridles.—Saddles and bridles must always match in color and be of as nearly the same shade as possible. For example, the one should not be light or yellow tan and the other russet or chocolate shades. For the park, riding academy or hunt, tan or russet leather is indispensable; for high school, white bridle and white saddle should be used, and for military and parade, black is the correct thing. The bridle should be double throughout, or two bridles in one, with a curb and snaffle bit or plain bit, each controlled by a separate rein. The metal used for bits, buckles and stirrups should be of plain polished steel, all of the same color. For military accoutrements, brass mountings are requisite. Bridles and saddles must be free from fancy buttons, "jingle bobs" or stamped leather.

Saddles should be provided with not less than two girths. Safety stirrups and spring hooks for stirrup straps will insure the safety of the rider and preclude the possibility of being dragged to death head downward. Cinch girths are not allowed except on cowboy saddles; but, after all, they are best, and in this one particular alone modern form overrules practical common sense and allows prejudice to restrain it from adopting a more useful method of girthing on a saddle. Hooded or covered stirrups

must never be used except for cavalry or driving cattle on the plains.

Ladies Riding Astride.—To the Centaur Club belongs the distinction of introducing and making popular the most sensible, safe and comfortable manner for ladies to ride—that of cross saddle riding. We are told that all the women riders of the world down to the time of Queen Elizabeth rode astride. At that time a sidesaddle was made to suit the convenience of a lady of her court who was a cripple and could not possibly ride astride. It became a fad then to ride a sidesaddle. But the cross saddle form for ladies' riding is gaining great popularity. The form of dress used by your club has been so perfectly designed by one of the lady riders in your city and is so familiar to you all that we will simply say it is perfect. No one will deny that it is altogether the safest and most comfortable manner for a lady to sit upon a horse, and is less harmful to the horse's back. Those people who had any prejudice as to the style looking masculine had their minds disabused of that notion when they watched the superb exhibition of equestrianism as given by the Centaur Equestrian Club during the late Chicago Horse Show. Very few of the spectators realized that the lady members of the club were mounted astride until some one familiar with the club called special attention to the fact that the ladies were not riding on the usual sidesaddles. The comments were universal that the ladies looked "all right" and that it was "the right way to ride."

Ladies' Habits.—The modern riding habit does not admit of very wide variation. The prescribed length is just to cover the bottom of the boots when the wearer is seated in the saddle. The prevailing colors for habits are black, dark blue and Lincoln green. Hats for ladies in all cases except *le haute école* should be a black derby, without any veil or ornamentation. A black cord should be attached to the hat rim and the shoulder to preclude the possibility of its blowing off on the ground. In the high school class, hats for correct form must be black derby or high silk hat. A scarf of white veil may be tied around the latter hat. When a veil is worn to protect the face or beautify a complexion, it should go entirely around the head, covering the hair, fitting tightly around the collar. Dresses for the sidesaddle should be made straight and scant on the left side, and on the right side made very full, with a decided bulge, and an open seam on the under side of the right side should be closed with spring glove buttons hidden under a flap, so that in the event of the rider being thrown or caught on the horn of the saddle when getting down the seam will rip open easily, freeing the rider at once. A good authority on the latest fashions in dress says:

"Golf is responsible for the increasing gayety of the latest made riding habits. Melancholy black cloth used to be the choice of the smartly mounted woman, but now she chooses her habit in a warm plum color or Robin Hood green or golden brown, and into her waistcoat and necktie she contrives to concentrate a brave show of stripes and buttons.

"The habit skirt has not varied by a hair's breadth, or length, either, in the last two or three years, but the coats for the present have rather long skirts and are made to roll back and reveal waistcoats of considerable gayety. These fasten with big flat or round bullet buttons of brass or silver, and as the waistcoat itself is often either of silk or satin, or very thin tailors' vesting, it may be striped or dotted or even figured to suit individual taste, and some of them are even made with pockets that have flaps, while full jabot of cream lace and high satin stock fills in above the top vest button.

"Such frivolity is only seen, however, in the riding schools and clubs on afternoons and evenings of drills and musical rides. Out of doors a severe high white linen collar is the thing, with either a bright cardinal or plaid Ascot tie filling in below the chin. In the open air this winter soft hats have been steadily worn by riding women in preference to the top hat or hard derby, as the pliable alpine hat has not half the weight of either of the others, and is at once warmer and better ventilated head-gear."

Ladies should wear riding boots instead of shoes, and gloves with gauntlets. White cuffs should not show, and but an edge of white collar, except when a white or red vest is worn.

Men's Riding Suits.—Men who ride regularly should have three different suits, and if they "follow the hounds" their wardrobe should contain an additional one for that purpose. The entire equipment for cross country riding differs essentially, owing to the unusual strain upon both rider and horse. Of this sport that most noted huntsman that lives in English story, John Jorrick, always proposed this toast: "Here's to fox hunting, the sport of kings and the image of war without its guilt and with only 25 per cent of its danger."

Gentlemen should wear for a morning ride in the park or country resorts a brown whipcord sack coat, with waistcoat and breeches of the same material, with melton or boxcloth leggings or jackboots. These should be buttoned with horn buttons on the outside and nearly in front. Tight leggings with straps and buckles are relegated to the Wild West. Fancy "horse blanket" vests are but little worn. If

the rider wishes to ride over muddy roads or for business, full length trousers may be worn made of light colored windsor cord, canton or corduroy. If top boots be worn, they must have square tops. Spring enamel leather leggings may be worn only when riding an artillery horse hitched to a cannon or caisson.

For afternoon dress or park or class riding, the coat and waistcoat must be made of black or very dark blue diagonal clay worsted or melton cloth, with trousers of dark blue whipcord or bedford cord, full length, with military mohair braid 1 inch wide down the outside seams, and have rubber footstraps. The coat must invariably be a three-buttoned cut-away. The skirt of coat must be short, just long enough to touch the horse's back without resting on the horse. All pockets must have flaps to keep out dust or rain.

Among the minor details requisite for the properly appointed equestrian, we may enumerate a black derby hat, brown gloves, black enamel leather shoes of a substantial style, ascot tie, crop, and spurs of small, neat form. The best spurs are those that are attached to the heel of the shoe by a spring box let into the heel. All the spurs that buckle on with leather straps are objectionable for the season that they interfere with the "set" of the trousers over the shoes; and, again, they resemble implements of torture. When gentlemen ride in the high school class they should wear an evening dress suit, white vest and white gloves, silk high hat, patent leather shoes, white saddle and white bridle, and a small ivory-handled whip is to be used in lieu of the crop.

The Riding Horse.—In conclusion, I feel like congratulating the pleasure riders of this day in the marked improvement of the saddle horses used. Good saddle horses are no longer freaks, accidents or a matter of training; they are a pure-bred, aristocratic equine race. The old "skates" and long-haired bronchos are relegated to history with the high-wheeled sulkey and wooden plow.

THE POULTRY YARD.

Remedy for Chicken Pests.

TO THE EDITOR:—Noticing in your valuable paper of 5th inst. an inquiry from E. W. Sylvester for a remedy for chigre, I will give one which we have found good: Take three parts of wood ashes, one part slaked lime; mix well and then pour in a little coal tar, and a very little carbolic acid. Mix well when the tar will become dry. Make a dust bath of this for your hens, and it will effectively clear out all insects including fleas. Be sure and do not make it too strong of either tar or acid or your fowl will not use it.

For Roosts and Houses.—Take about ten pounds of stone lime, pour over it a quart of coal tar, then add water in the usual way for slaking lime. Stir and add water till it is well cooked and thoroughly mixed. Thin and use with a brush in the usual way on walls, roosts and nests. Spray well the floor (after it has been thoroughly cleaned) with this same mixture thinned; or, if more convenient, mix up a lot as for the bath and sprinkle it all over the floor, under roosts and all. If this is well done occasionally these troublesome vermin will soon be a thing of the past. San Jose. SUBSCRIBER.

From an old Subscriber.

TO THE EDITOR:—In answer to E. W. Sylvester's inquiry for a remedy to kill chigre: We had them one year when we lived in Stanislaus county. My daughter took a bucket of water and put carbolic acid in it, and washed her chicken house with it with a swab. We never had any more trouble with them. I have taken the RURAL PRESS ever since it was begun in 1870. It is very dry here, there will be no crops except we get a good rain.

Reedley.

J. H. CARPENTER.

Dried Eggs for Alaska.

P. M. Kiely of St. Louis writes to the *Fruitman's Guide* that St. Louis parties are now making big profits shipping eggs to Alaska. The Klondike regions will soon be flooded with fresh eggs from that market. The eggs will not go out in the usual way. St. Louis has an egg desiccating company, where the hen fruit is dried and reduced to a powdered condition. It is then put up in sealed cans and is thereafter safe for any port in the universe, being in such shape and condition as to be impervious to either heat or cold. Hundreds of cases of eggs have been so handled the past few weeks, and every steamer bound to the Klondike for months to come will have some of this food for the miners and others invading Alaska. The profits to the shippers are regarded as immense.

Eggs are in St. Louis in abundance and at prices that place them within the reach of all. There is really no margin visible between St. Louis and any Eastern markets. The local demand is heavy and consumes the bulk of the current receipts, but the receipts are not as large as they should be at this time of the year.

THE STOCK YARD.

A Great Sale of Herefords.

RURAL readers will remember our allusions to the Sunny Slope sale of Herefords and to the advertisement of the proprietor, Mr. C. S. Cross, Emporia, Kansas, which appeared in our columns. The sale was held as announced, and was a very significant success, as the following account, which we shall compile from the *Breeders' Gazette*, clearly shows:

A World's Record for Herefords.—A world's record was made at the Sunny Slope sale of Herefords, when 144 head of pure-bred cattle were sold for cash at auction for an average of \$407 each! Higher averages were made at many Shorthorn sales during the "boom" days following the New York Mills dispersion, and higher averages have been made at a few Hereford sales, but with one exception none of these were made upon any such number of cattle. The exception was the Carwardine sale in England in 1884, when an average of £125 was made upon 183 head; but this included Hy Vaughan's sensational bid—3800 gs.—on Lord Wilton, the grand old bull being disposed of later for 1000 gs. Not only that, but this Stocktonbury sale was a dispersion of the entire celebrated herd. Had Mr. Cross sent all his Beau Real cows—old Wild Tom and the show herd—through the ring lately, the Carwardine average would have been buried fathoms deep. At Mr. C. M. Culbertson's Chicago sale in 1885 thirty head averaged \$505. At Mr. Earl's sale at Kansas City in 1883 thirty-seven head averaged \$576. At the great S. W. Jacobs' sale of 146 Shorthorns at West Liberty, Ia., in 1876, 146 head averaged \$595. This was also a closing-out sale, and, as at Carwardine's, some of the top lots were, we believe, not settled for, a \$7000 cow being involved in this way. At the B. B. Groom sale of Bates Shorthorns in Kentucky in 1875 an average of \$573 was made on 119 head. At New York Mills 110 Shorthorns averaged \$3471. That, of course, is—and we trust ever will be—the world's record for stupendous folly in cattle speculations. At Col. Wm. S. King's Chicago sale, in 1873, seventy-nine Shorthorns averaged \$1623, but this included a Duke bull at \$12,000 that was not settled for. It thus appears, so far as we have any records or recollection, that Mr. Cross holds the world's record for all breeds, numbers considered, at auction outside of absolute dispersion sales. The top price was the highest ever made by a Hereford at auction in America, and the highest ever made by a bull of any breed west of the Mississippi river.

Imported Animals Still in Demand.—The sum of \$3000 for an imported two-year-old bull! \$1500 for an imported heifer! \$1000 for an imported bull calf! An average of \$595 for thirty-seven head of young cattle bred in Herefordshire, with two bulls reserved by Mr. Cross at a valuation of \$1000 and \$3500 respectively! Such is the crushing answer of Western breeders to the charge made in some quarters that we have no further need even for occasional recourse to good blood from the parent stocks beyond the seas. This proved indeed "the real point of interest" and the result demonstrated that the probable value of fresh blood is fully appreciated by those who have looked deepest into the problems of cattle-breeding in America.

The Sale and the Buyers.—The sale was attended by not less than 3000 people, including a large majority of the leading breeders of the United States. Col. Jas. W. Judy opened the ball at 1 o'clock Wednesday afternoon by delivering a brief address and was followed by Col. Fred M. Woods, who began the selling. Mr. Cross had reserved the right to bid upon three head of the imported cattle. It was announced by the auctioneer that the animals covered by this reservation were the bulls Keep On and Saxon and the heifer Luminous and that these cattle would not be offered until everything else had been sold. The first lot sold was the imported yearling bull Randolph of John Tudge's breeding. He was taken out of \$600 by Mr. C. N. Whitman for the Ridgewood (Lucien Scott) herd at Leavenworth, and inside of twenty-four hours \$1000 had been offered and refused for the bull. Mr. Cross had aimed at dividing the 150 head into two lots of about equal quality in order that interest in the sale might be maintained until the close. Imported and home-bred bulls and heifers were therefore "sandwiched" throughout the selling, and before the first day's work was done four figures had been reached, Wm. S. Van Natta & Son taking the fine bull calf March On at \$1000. This promising youngster, of Ed Yeld's breeding, had for sire the lamented Lead On, regarded at the time of his accidental death last season as one of England's greatest Hereford sires. The dam of March On, Royal Daisy 2d, was considered by Mr. John Steward—Mr. Cross' agent—as the best cow he saw in Herefordshire. The calf has remarkable finish, depth and smoothness, and in the Van Natta herd will have every opportunity to make a record. The Wild Tom bulls and heifers were sent into the ring in great bloom, their fine backs and great coats of hair commanding unstinted praise. Among the former the show yearling Orpheus 71100 was offered during the afternoon of the first day, and

after a lively tilt between Mr. Geo. H. Adams of Colorado and G. W. Henry of Chicago, was knocked off to the former at \$855.

Summary.—The following recapitulation of the results of the sale is interesting: 76 bulls sold for \$32,930, an average of \$433; 68 females \$25,655, average \$380; 144 head \$58,585, average \$407; 23 imported bulls \$14,170, average \$616; 14 imported females \$7880, average \$563; 37 imported animals \$22,050, average \$595; two bulls taken out on reserve bids at \$4500; 11 Wild Tom bulls \$4835, average \$440; 27 Wild Tom females \$9825, average \$364; 38 head Wild Toms \$14,660, average \$386; 53 home-bred bulls \$18,760, average \$354; 54 home-bred females \$17,775, average \$329; 107 home-bred cattle \$36,535, average \$341.

THE VETERINARIAN.

Veterinary Inspection in Santa Clara County.

The San Jose Farmers' Club has vigorously entered upon its career as a progressive organization. Permanent quarters have been secured, including a large assembly hall, a committee room and a secretary's room. This last room will be open all the week except Sunday, and is intended to be used as a room where the farmers and their families can assemble at any time they desire. Magazines and reading matter will be procured. A number of valuable books have been secured from Congress and this club will combine with other clubs of a like nature throughout the State to ask Congress that consuls in foreign countries be required to furnish monthly reports concerning fruit and grain supplies. Members of the club will also send in reports regarding any sales of fruit they may have made. On the opposite side of the hall in which the Farmers' Club is located will be rooms to be occupied by the G. A. R. and the Grange jointly. They comprise a large assembly hall, ante rooms, a large dining room capable of seating 150 persons, a kitchen and a ladies' room. They also will be finished in a short time.

Dr. Spencer's Report.—At the meeting last week there was a good attendance and the paper read by Dr. H. A. Spencer on a "Review of the Investigation of the Domestic Animals in Santa Clara County" was listened to with great interest. He said in part:

Glanders.—The first attempt at official interference with the propagation of disease germs among domestic animals occurred in the county in 1888. At that time the industry of rearing fine horses was being carried on, and Dr. J. Savidan discovered that the dreaded disease, glanders, was prevalent. He commenced an agitation of the necessity of a protective ordinance, but it was some time before the authorities were convinced of its importance. I was elected county veterinary inspector, with positive instructions to go only in response to urgent calls and complaints. Under this ordinance in eight years there were condemned and destroyed 107 horses and mules affected with the glanders, and the disease completely wiped out in this county.

Tuberculosis.—About Sept. 1, 1895, the Boards of Health of San Francisco, Oakland, Alameda and San Jose, viewing with alarm the increase of tubercular disease among children, resolved to modify its ravages through sanitary regulations, and knowing milk to be one of the food factors very often pregnant with disease-bearing germs, formulated ordinances restricting the sale of that product unless known to be from healthy cows.

In order to be enabled to systematically conduct such an inspection as they deemed necessary to determine the condition of the herds, the Board of Health of the city of San Jose induced the Mayor and Common Council to pass an ordinance providing for the appointment of a veterinary inspector and prescribing his duties. The Common Council, realizing that inasmuch as most of the dairies and slaughter-houses were located outside the city limits, a city official would not be invested with sufficient jurisdiction, it was determined that the Supervisors should be asked to co-operate, and, through Supervisors Greeninger and Selby, the law was finally passed, though some opposition was manifested.

The United States Department of Agriculture furnished the necessary tuberculin gratis, only requiring that the records of each test should be forwarded to the department. After more difficulty, assistants were appointed, and for a time sailing was smooth. But the appalling number of cattle condemned began to frighten the dairymen and cattle-owners and the result was all manner of trouble. This was quieted down, but in 1897 they had the misfortune to collide with the interests of the great cattle king, Henry Miller, who enjoined them from further interference with some fifty-nine head of cattle belonging to him.

Upon Mr. Spencer's resignation, which occurred shortly afterward, the attorneys for Mr. Miller made

a motion in court for a verdict for their client. At the solicitation of his own attorney and of the district attorney, he then consented, in deference to justice, to reappointment, but with the explicit understanding that it should be without salary and be a matter of record that it was done to keep faith with the taxpayers.

Statistics.—During the inspection he examined in round numbers 5211 head of cattle, and of the 800 head re-acting to the tuberculin all have been slaughtered and their autopsies recorded with the exception of the fifty-nine head above mentioned and six head belonging to a man named Mayne, living near Alviso. Since Nov. 1, 1895, there were confiscated by him and deputies 15,410 pounds of diseased and impure products prepared for food; 4072 samples of milk have been tested for butter fats and 8244 visits of inspection made to dairies, etc. This, then, is a history of the rise, progress and decline of the sanitary policy in Santa Clara county.

Answers by Dr. Creely.

A Dentist Needed.

TO THE EDITOR:—Will you kindly tell me what to do for a horse that will not eat barley, rolled or otherwise—in fact, nothing but hay, and that lightly? He is about six years old and seems to be in good condition. He has been in the pasture for more than a year and we have put him in the plow, but he doesn't eat enough to justify the work he has to do.

Trask, Sacramento Co. M. G. COGGESHALL.

The services of a good veterinary dentist are urgently needed. Dr. Fox or McCulloch of your county are qualified. Also use the following powders: Pulverized quasia, $\frac{1}{2}$ oz.; pulv. yellow cinchona, 1 oz.; pulv. gentian, 2 ozs.; pulv. ginger, $\frac{1}{2}$ oz.; mix and make twelve powders and give one daily mixed with honey or molasses and spread on tongue.

Abnormal Appetite.

TO THE EDITOR:—If any of your many readers will give a remedy to prevent young sucking calves from eating rags and sacks when they can get them, it will be doing cattle raisers a great favor.

West Butte, Cal. E. A. NOYES.

In the majority of cases it is pica and is due to the system craving for something it lacks and requires. Give small quantities of salt; often powdered bones are also beneficial. Lime phosphate is considered a specific.

Another Case of Caked Udder.

TO THE EDITOR:—Would like to ask Dr. Creely through the PRESS if there is any cure for a caked udder. I have a Jersey; two years ago she got cut on end of teat and spoiled it. She calved a week ago to-day—first time in two years. I have used hot applications of elder, also poultices of elder leaves and flaxseed. I can get a flow of milk, but with considerable pain to the cow. Occasionally little lumps clog the passage, and there is a hard lump as big as your fist in the udder at the base of the teat, which don't seem to get any smaller. I have been working on her a week. This morning I started in to rub in a liniment of ammonia, turpentine and linseed oil. Will that dissolve the lump or is there anything to use to dissolve it and not dry up the milk? I used camphor and lard, but it did no good.

Hacienda. Jos. P. STANLEY.

Use iodine externally and iodide of potash internally. Use a milking tube, the cost of which is 30 cents, and inject Marchand's peroxide of hydrogen. This treatment was given in the RURAL of March 26, to which the reader is referred. Turpentine, linseed, etc., is of no benefit. Any camphorated liniment is beneficial.

THE FIELD.

Economy on the Farm.

At the meeting of the Farmers' Institute in Niles on Saturday last Mrs. T. O. Bunting of Centerville read a paper on "Economy on the Farm." She said:

This subject has rather forced itself upon us in the last few years. We did not take it up of our own accord, but it was slowly and surely placed in our hands, directly under our eyes and pressing strongly on our pockets.

The Turn in Affairs.—Before the great strike in 1894 the orchardist led a jolly life. If he happened to lose on one crop he made it up on another, and as a rule it was a good, steady income. The strike caused great losses all along the line. It did not find us all prepared. Some of us had bought more land; some had ventured into uncertain speculations; some had assisted friends, and all of us were looking forward to the next year's crop to see us even. We were depending on the same generous prices hitherto enjoyed. At the end of the year we felt grave, but after thinking it over decided that there was no need of worry—next year would make it all right. Sooner or later we faced the problem; economy

must be practiced. Where should we begin? Cheaper help, and less of it? Looking after waste ground, weeding out unnecessary animals?

We are told that the American housewife throws away enough to keep a French family better than the American one lives. To the thrifty German and Swede no doubt the American farmer stands in the same place; and while we hope not to be compelled to practice the art quite so closely, we will take some notes. Perhaps we can strike a happy medium.

No Waste Land.—There is hardly a farm that does not contain waste ground. These areas are unnecessarily large; here is a big brush heap; there a straggling wood pile; old sheds stand around going to waste; here trees too old or of an unprofitable variety. Move the fences, burn your brush and put the ashes where it will do the most good. Compress the wood pile, or fix up the shed and pile it in there. Take out the poor trees and you will be surprised at the room you have made and the number of trees you can get in.

Between the young trees plant some hay, corn, beets or carrots, with the ever useful pumpkin, until your trees are old enough to hold their own. Save a warm corner for vegetables and see that you raise at least your lettuce, sweet peas and corn, string beans and spinach.

Hired Help.—The help question figures up strongest in the year. We seem to feel it more, for with the depression in fruit, wages have changed but little. Many a family earn the necessities of life in our orchards. I believe in using the families around me as much as possible, but I also believe that a few Chinese and Japanese are very good things to have around. Almost always, a time comes when every one is busy, and the fruit will not wait; the Orientals can always find some friends who will work in until the rush is over. Each year this trouble is decreasing, as our neighbors are increasing.

Saving.—The great secret of coming out ahead is not spending until you get it. Look for the little wastes. It is not economy to let ladders go for the

want of a little repairing; or leave boxes lying around to be broken or blackened by the weather. Save your pits for fuel, but it is not economy to let the help burn the stove out with them. Use your corncocks to smoke your home-made bacon and ham. Have a place for your tools and keep them there. Teach your children how to work, but don't make the farm a place of drudgery that will hide all the beauties of nature and country life.

Take Hold Yourself.—It does not pay to let the farm run itself. You must be up in the morning and see that things start right. They will need you keeping them straight. There is no economy in you and your next door neighbor discussing this matter, or any other, in the corner saloon. At the same time your help will be holding down the plow handles or chatting pleasantly, while six or eight horses stand idle. I don't think saloons represent economy in any way.

There is economy in taking hold of the plow handles and pruning knife yourself. There is economy in hurrying up the work and taking your wife and children into the hills for a couple of weeks. It is not economy to go to some fashionable watering place and pay out a whole crop of cherries for fine clothes and hotel board.

There is economy in taking a good fruit paper and keeping posted.

I believe it is economy to sell your fruit on the trees if you can get your price; your dried fruit as soon as ready for the best price offered.

But whether it is economy to ship East—I will leave that to some one better posted than I am.

Catching House-Breaking Birds.

TO THE EDITOR:—If the man who some time ago enquired in the RURAL how to get rid of woodpeckers will put a shelf on the house just under where they work, and set a steel trap, he will soon catch them. I have caught several in that way.

MARY J. JOHNSON.

Zucker, San Bernardino Co.

THE APIARY.

Honey Men Looking for Alaskan Trade.

L. G. Clark of Napa advises the *American Bee Journal* that honey may find an outlet northward. The mining regions of Alaska have, during the past season, taken thousands of tons of California evaporated fruits and vegetables, beans, bacon, etc. The opening of spring will see hundreds of vessels laden with these commodities going northward, and their cargoes will sell for fabulous prices among the famishing Klondikers. Thousands of prospectors will be rushing in, and the amount of provisions necessary to supply that vast region will be enormous. One of the principal articles in every prospector's outfit is syrup. Every company that contracts to take up and supply men agrees to furnish a given amount of syrup. Fat and fat-producing foods are the most necessary articles of diet in that cold region; hence the heavy demand for sweets.

Syrup, as well as other articles of food and equipment, sells for many times its actual value, and there is no gainsaying the fact that in a country where gold is the cheapest commodity honey in every instance would be given the preference over the cheap syrups and trash now supplied them. The transportation and commercial companies now controlling that trade are furnishing the cheapest grades of syrup and imitation honey in order that they may gain the greatest possible profits.

There is some talk of necessary legislation by the present Congress on behalf of Alaska, and if a pure food law—a most decidedly necessary one—could be passed for the benefit of that country, it would do much towards relieving the honey market. True, California would get the bulk of this trade, but that would relieve the Eastern markets accordingly.

I have read much of late about the United States Bee Keepers' Union, and there are some who seem to doubt its possible usefulness. Let the union present the above proposition regarding an Alaskan pure food law to Congress, and secure its passage.

Breeders' Directory.

Six lines or less in this directory at 50c per line per month.

Horses and Cattle.

F. H. BURKE, 626 Market St., S. F. Holsteins, winners for three years of State Fair butter contests; Jerseys and Durhams competing. New Catalogues. Registered Berkshires.

JERSEYS, HOLSTEINS & DURHAMS. Best Butter and Milk Stock. Thoroughbred Hogs and Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER Saxe & Son, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

E. S. DRIVER, Antelope, Cal. Durham Bulls, Jacks and Jennies for sale.

Poultry.

FOR SALE.—Eggs from my fine stock of single-comb Brown Leghorn fowls, winners of prizes at Cal. State Fair 1897, and Cal. State Poultry Assn Show 1897; B. S. Cummins, judge; score, 87 to 93%; and C. S. P. Show 1898; W. W. Browning, judge; score, 91% to 94. Also from my prize-winning stock of Mammoth Bronze Turkeys, 1st and 2nd at C. S. Fair 1897, and 2nd at C. S. P. Show 1898. Pearl Guinea eggs \$1 per setting. M. B. Turkey eggs 25c each. S. C. Brown Leghorn eggs 50c and \$1 per setting of 13. All farm-raised fowls; large, hardy, fine. Write for wants to J. R. Catlett, Pleasant Grove, Cal.

BROWN LEGHORN Eggs from my winners at San Francisco, Oakland and Sacramento. \$2.50 per 15; \$4.50 per 30. L. W. Matthias, Sacramento, Cal.

MRS. J. G. FREDERICKS, Madison, Cal. Fresh Eggs in small or large lots at reasonable prices from choice Brown and Buff Leghorns, Black and White Minorcas.

SACRAMENTO POULTRY SUPPLY CO., 1025 J St., Sacto. (Successor to Townsend & Co.) Manufacturers and dealers in Poultry Supplies. Coast agents Monitor Incubator (highest award World's Fair). Thoroughbred Poultry and Eggs. Catalogue free.

W. H. YOUNG, Stockton, Cal. Incubators, Brooders, Poultry, Pigeon & Dog Supplies. Catalog free.

SANTA TERESA POULTRY FARM, Eden Vale, Cal. Barred Plymouth Rocks, Black Minorcas, White Leghorns, Brown Leghorns. Fine Stock and Eggs for sale. Send for circular.

WILLIAM NILES & CO., Los Angeles, Cal. Nearly all varieties of Poultry, Dairy Cattle and Hogs.

SEND FOR CATALOGUE OF CALIFORNIA'S greatest poultry farm. J. W. Forgeus & Co., Santa Cruz, Cal. Belgian Hares.

CALIFORNIA POULTRY FARM, Stockton, Cal. Send for illustrated and descriptive catalogue, free.

EXCELSIOR POULTRY YARD, Kingsburg, Cal. Send for circulars describing stock.

WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

MANHATTAN EGG FOOD, Red Ball Brand, at all grocers; or wholesale, Tiltman & Bendel, S. F.

Swine.

ELIAS GALLUP, Breeder of Poland China Hogs, Hanford, Kings Co., Cal.

BERKSHIRE AND POLAND-CHINA HOGS. Best Stock; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

J. P. ASHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Swine.

Sheep and Goats.

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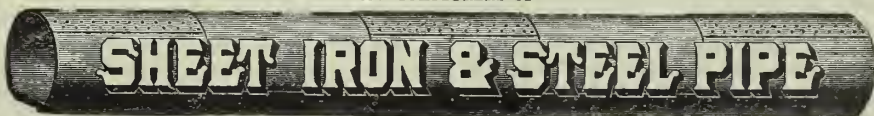
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THE HOME CIRCLE.

Arctic Lovers.

Southward the Ice and Snow have come—
Strange lovers hand in hand—
Far wandering from their native home
To seek a sunny land.

Deserted haunts of bird and bee,
On branches gaunt and bare,
They turn with arctic alchemy
To gardens of the air.

For weirdly now the Ice and Snow,
Beneath a golden flood
Of sunshine, make the branches glow
With polar fruit and bud.

And yet their witchery is vain,
For swift as Orient night
The sunshine brings these lovers twain
A tragedy of light!

—Harper's Bazar.

Woman's Ways.

Been a-hunting all creation
For them blamed old specs o' mine,
Had'm here this very mornin'
Sure as rain in harvest time.
Know I put 'em, same as usu'l,
On the shelf here in the cup.
'Clare to goodness!
Can't find nothin'
When the wimmen
Clare things up.

Always puttin' things in order!
Sets m' blood a bilin' red
When these wimmen—tarnal nation!
Here they be on top o' my head!
I'll be darned! I might o' knowed it;
Sorry now I kicked the pup.
Hain't it funny
Where the wimmen
Put things when they're
Clarin' up?

How Grandmother Came Home.

When the railroad came to Creston Grandmother Wheeler's heart almost broke. Not that the dear old lady was opposed to progress—though perhaps her definition of the term differed a trifle from that accepted by a younger and more matter-of-fact generation; but whatever her private opinion as to the comparative merits of the stage coach and the modern Pullman as a means of travel, it was not the mere advent of the railroad that stirred her wonder and resentment. These emotions were due to the fact that the big, powerful company wanted the ground on which her home had stood for over forty years, and that the gleaming rails which she could not help thinking had an uncanny and almost evil look, were actually to run through her flower garden. As for the lilacs and the current bushes and the big maples which shaded the house, she could not trust herself to think of their fate.

So Grandmother Wheeler wept and wrung her hands, and her heart was near breaking.

Her son, Wellington Wheeler, who lived in the big city, fifty miles from Creston, was not sorry for the innovation. It had long been a real trial to him that his mother insisted on remaining in the little house where her husband had died, instead of enjoying the luxury of his elegant home. When at breakfast one morning he read her pathetic letter, telling him what seemed likely to occur, and asking if nothing could be done to prevent it, he smiled like a man well pleased.

"The dear old lady will have to come to us now," he said, "and be made comfortable in spite of herself."

But his daughter Florence looked grave. She understood better than her father did the pain in that fond, clinging heart.

When it had become conclusively proved that the railroad company was not to be induced to alter its mind, Grandmother Wheeler bravely submitted to the inevitable, as she had done scores of times before in her long life. And now that her change of abode was only a few weeks in the future, Florence's face took on an expression of great thoughtfulness.

"Did you ever notice," she asked her brother, Carlton, one evening, "that my room is almost the shape of grandma's sitting-room, only it's a little larger and higher-posted, and has more windows?"

Carlton reflected. "I hadn't thought about it before, but I guess you're right."

"If there were only a door leading

to the small north chamber," Florence continued, "the two would have just the same position as her sitting-room and the little down-stairs bedroom."

"I don't see quite what you are getting at, sis," said Carlton, humbly. He was a well-trained brother. Though frequently he was unable to grasp his sister's plans until they were explained to him in detail, he never failed to admire and approve. Nor was this instance any exception to the general rule, though he did say doubtfully once:

"It seems a pity for you to give up a room you like so well."

And Florence made haste to reply: "You don't suppose that I'll mind that, do you, if only we can make her happy?"

When Mr. Wheeler was asked to have a door cut from Florence's room into the north chamber, he opened his eyes rather widely; and when she explained further, he said that she had too many notions in her head for a sensible girl. And then Florence eagerly proceeded to convince him that she was right, and Mr. Wheeler listened, sipping his coffee and feeling on the whole rather proud of a daughter who, instead of crying or sulking over not getting her own way, sweetly set to work to reason him into her own way of thinking. The result of her conference was that Florence was not only given permission to have the door cut through but to make any alteration she thought advisable.

The most important of these was the modification of the gas grate. Grandmother Wheeler had told Florence in confidence that it made her feel creepy to see a fire blazing away and never burning anything but itself. So in place of the convenient and modern grate was substituted a fair imitation of the one beside which grandmother's rocker had swayed and creaked for forty years. The chandelier came down, too, because grandmother could not understand how people preferred to turn a button and have the room suddenly illuminated, for all the world like the work of witches, rather than to scratch a match and light a lamp in the good old-fashioned way. Moreover, she knew that the much-praised electric lights were own cousins to the lightning, and she felt sure that sooner or later, they would conduct themselves in a manner suggesting the undesirable relationship.

It must be admitted that Carlton looked shocked when Florence announced her plans for preparing the rooms. They were frescoed at present in the most delicate and tasteful tints, and Carlton said his sister reminded him of those plebeian people of whom European travelers tell, who occupy the palaces of a by-gone nobility and cover rare old carvings with the cheapest and gaudiest of modern wall paper. But Florence silenced him, if she did not convince him, by quoting:

"If she be not fair to me,
What care I how fair she be?"

The clerks at the down-town shops where she applied for aid in the latest project, looked more aghast than had Carlton, and Florence was almost ready to yield the point in despair, when the brilliant idea struck her of making investigations in some of the little towns outside the city. After an exhaustive search she returned in triumph, bringing many rolls of paper of an exquisite design, representing a blue lady wandering beside the bluest of lakes, while a blue willow drooped mournfully in the background. And this was as like the paper Florence remembered admiring in her childhood on the walls of grandmother's "best rooms," as if the same artist had been responsible for them both.

"We are not going to consider the idea of your staying with your friend, Mrs. Carr, for more than two weeks," she wrote to the old lady soon after this. "It will be better to have your goods sent on at once, so that they may be safely stored before you come." A few days later grandmother's household effects arrived, and, at the end of the stipulated fortnight, grandmother herself.

In the hurry and bustle of the big city the shrinking old lady felt as some

shy bird might, on suddenly finding itself in a wilderness of human habitations instead of its familiar forests. She held fast to her granddaughter's hand as they drove swiftly along the wide streets between rows of tall buildings which looked to her as if they might topple over at any moment. She shivered as she went up the steps of her son's house. How big and grand and forbidding it appeared! And within, the appointments that seemed to her simplicity the height of splendor, produced on her the same effect as continued gazing into a kaleidoscope.

Florence saw the troubled look on the wrinkled face.

"Come up-stairs to your own room, dear," she said, with sweet persuasiveness.

Grandmother followed obediently.

The image of the room she had occupied on the occasion of her last visit was present in her thoughts. She remembered how thick the carpet had been and how luxurious the draperies at the windows. Wellington Wheeler was not the man to give his old mother anything but the best the house afforded when she made one of her rare visits. It was a cause of constant wonder to him that she was invariably homesick through every moment of her stay.

Up the stairs, along the halls, through the door which Florence held open, Grandmother walked slowly. Once inside the sunny south room, she caught her breath. Her foot pressed a rag-carpet of familiar pattern, and here and there were the rugs which her own fingers had braided. The wall with its beautiful blue paper was hung with the pictures of the faces dearest to her. On the center-table stood her reliable oil lamp, with its gaily decorated shade. Was her fancy playing her trick, or did that door actually open into her own little bed-room, furnished with the very objects on which her waking gaze had rested every morning for such long years? The grate, where the wood fire crackled, was her own grate and her own rocker was beside it, and on the cushion a big Maltese cat purred contentedly. Grandmother had always been the owner of a Maltese cat until six months previous, when her pet, Star, had died. She had regarded his taking off as providential, for she knew that the coming of the railroad would prove a death-blow to a cat as devoted to home as was Star. Nevertheless, the sight of those yellow eyes, blinking contentedly from the cushions of the splint-bottomed rocker, was too much for her, and she dropped into the nearest chair and sobbed aloud.

"What is the matter, Grandma? Don't you like it?" cried Florence, somewhat chagrined, and not a little alarmed at the result of her plot.

"Like it! How could I help liking it? Why, it's just coming home."

Grandmother looked about her and an expression of wonderful serenity and happiness shone through her tears. In the big, unknown wilderness the timid heart had found her own dear nest, and there she was content.

Richard, the Cowboy.

"May I go to the round-up, papa? O, let me go. Manuel says it is to-morrow," shouted Richard, as he came flying into the house, his sombrero pushed on the back of his head, with wide leather belt around his waist, boots and spurs, a typical little cowboy.

"You said I could go next time the round-up was at Huachuaca (wa chu ca); those Mexican steers are such dandy fellows to 'lass'."

"That is why I am afraid to let you go," answered his father; "if you would only throw your reata (rope) after a calf there would be no danger, but you would be thrown or dragged if you should 'lass' one of those wild steers."

"I thrown! I, on Chiquio! He is an old cow pony; he would get out of the way. O, let me go to-morrow," begged the boy, putting his arms around his papa's neck.

Hesitatingly, his father said, "yes." "You will have to be up by daylight. Put a blanket on behind your saddle; we will not be back for three days, but promise me that you will be careful, and keep away from the large cattle."

Off dashed Richard, not waiting to promise, shouting to the vaquero, "Manuell Manuel! I can go."

The Mexican, who had been listening at the door, greeted the boy with a glad smile. He was proud of him. He it was who had taught him to ride, made his reata, beginning when he was only four to teach him how to throw it, and now when eleven, Richard could not only throw it over the head, but also around the foot, a difficult thing to do, of a running animal. It was Manuel's joy to take him to a round-up and hear the exclamations when the boy would "heel" a calf.

At daylight Mr. Kitt called the boy. Before he had reached the kitchen, Richard was by his side, dressed, boots, spurs, and all, ready to start. "What! dressed already?" asked his father. You were asleep when I called you."

"Of course I was," laughed the boy. "I dressed before I went to sleep, as the Mexicans say;—cup of coffee, muy pronto," (very quick) this to the cook.

Breakfast over, the first in the saddle was our little cowboy. All were soon galloping over the hills to the place of meeting.

Richard's father took hold of Chiquio's bridle. "Now, my boy," said he, "remember, don't you try to 'lass' big cattle. Manuel, keep by this boy. I put him in your charge."

The ranchmen had all brought their

Bad Blood

is a good thing to be rid of, because bad blood is the breeding place of disfiguring and dangerous diseases. Is your blood bad? You can have good blood, which is pure blood, if you want it. You can be rid of pimples, boils, blotches, sores and ulcers. How? By the use of Dr. Ayer's Sarsaparilla. It is the radical remedy for all diseases originating in the blood.

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vaqueros, cooks and branders, so that there was a goodly number of men. Richard was the only boy.

Each rancher greeted him on riding up. "How many times will you be thrown to-day, tenderfoot?" laughingly asked one.

"Have you been tied to your saddle?" asked another one, who lived miles away.

"Tied on!" answered the first, "why man, you don't know that boy! He is our Buffalo Bill. Keep your eye on him to-day, you will see some riding; take care of the wild steers, Richard," he shouted as he rode off.

The men were sent in different directions, Richard going with Manuel. It was hard driving the cattle. They were wild, easily frightened, the cows bellowing and rushing about when their calves were caught and thrown down to be branded. A steer required more than one man to throw and hold when he was to have a new brand put on.

Richard soon had his reata around the neck of a calf. "Give him a dew lap, boys; the cow has one, it is mine."

This brand is the skin of the neck cut in a strip about two inches wide and six inches long, letting it hang down.

This being done, on they started again. Hearing a sound of running, Richard turned and saw coming along a frightened steer, with the broken end of a reata hanging from its neck.

After it the boy went, his lasso circling around his head. Catching up with it, his reata went whizzing through the air, heeling the steer by its hind leg.

Richard soon saw that he had his hands full. The animal feeling its leg pulled into the air, tried to run, but the trained cow-pony stiffened its fore-legs, letting its haunches almost rest on the ground to hold it fast. The steer finding this would not do, then turned and made for the pony. On it came, tail in the air, head lowered to do its deadly work. Here is one of the great dangers to the cowboy.

Richard and pony saw this at once. Turning about, he got behind the now maddened steer, keeping his reata taut. In a moment the animal wheeled and again made for the boy.

Equally quick was Chiquio, dashing to one side. The animal then started in an opposite direction, trying, by pulling, to break the reata, as he had broken the one hanging from his neck.

Though our little cowboy did not know it, his greatest peril was now. The reata being fastened to the tree of the saddle, the pull was sudden and powerful.

The reata, the pride of both Richard and Manuel, who had made it, did not break, but the saddle, not being cinched (tightened) for such a strain, began to turn.

At this moment Mr. Kitt, whose broken reata was around the neck of the steer, reached the top of the hill. He saw Richard's danger. Putting spurs to his horse, he dashed on, calling to his vaqueros: "'Lass' it, boys!" After it, Manuel! Hold on, Richard!"

For a moment the boy went with the saddle, then kicking his foot free, he threw his arms about the neck of Chiquio, and kept on its back. The pony, not being prepared for the turning, was almost thrown on its side, when away through the air went the 'lass' of Manuel, landing on the neck of Mr. Steer, soon beginning to choke it. Another and yet another whizzed by, holding the furious beast fast.

Mr. Kitt soon had his boy in his arms. He was too much overcome to scold him for his disobedience, Richard clinging tightly to his father's neck.

"I did not mean to be naughty, papa. I threw my 'lass' before I thought. Don't send me home," he begged.

"Cut a dewlap in that steer; the boy has earned it—it is his," called in a loud voice the owner.

Richard looked up and saw the man who had laughed and asked him if he was tied to his saddle in the morning.

And thus ended the little rider's rough experience at the round-up.

Fashion Notes.

The skirts of all tailor gowns are plain, with exceptions now and then, like stitched straps trimmed with tailor buttons, or with deep hems turned up on the outside, and covered with rows of braid or silk stitching. The jackets that accompany these simple skirts are made to look very dressy by open fronts, with which are worn any number of fancy vests, change and change about, thus varying the appearance of the costume constantly by the use of the wholly different fabrics which form these natty and stylish toilettes.

Changeable effects still appear among silks, satins, velvets and fancy dress goods in silk and wool mixtures, notwithstanding their greatly extended lease of favor.

Leather bedside slippers can very easily be made at home. The leather is of any color that is desired, and it is often a very gay one, and is mounted over the toe of a lamb's-wool insole. A bit of fur finishes the edge, and thus is evolved a comfortable toe slipper. A comparatively small piece of the skin makes two or three pairs, and the expense of both money and effort is very trifling.

Lace shawls are also used for silk drapery over satin dinner gowns. The center is cut enough to admit the waist and the points fall in front, at the back and at either side.

The new foulard silks are supplied with a border which furnishes all the necessary trimming, with possibly a little lace and ribbon for the finish on the waist.

A device suggested by a French dressmaker to one of her customers is to wear, where one's arms are not as plump as desired, a dress sleeve inside of the glove. This is for the demi-toilette for a reception and similar uses. It is a fashion that is particularly easy to copy at the moment, for the little puffs at the top of most sleeves form the surmounting of the glove almost as if the arms were bare. Wearing the sleeves in this way contributes to the dressy finish of a simple toilette.

Miniatures of historical personages, set around with diamonds, are very fashionable for wedding gifts.

The novelty goods and French and English suitings for women's wear this season are in soft medium weights in pretty blended colors, the result being a very uncertain shade. The English goods are proof against wear and tear; and, although they can be made up in combination, they are most stylish when the single material is used for the entire costume. A very attractive textile called drap de Ladack is much like a double-warp cashmere, either plain or interwoven with threads of various bright shades. The same style of fabric is also being woven into a pattern of handsome spring plaids and heather-mixed checks.

The shawl-shaped cape made of black lace over colored silk is one of the spring novelties in wraps, and the edges are finished with ruffles of chiffon or lace. This will prove a very useful fashion for those who have lace shawls stowed away in their cedar chests, for they can be utilized with great effect in one of these novel garments.

Lace which has become yellow with age is exactly the right tint required by fashion.

Dog collars are made of cream or black net with sprays of old lace applied on. Loops for the hair are also formed of the same ornamented net, wired to keep them in place.

Fleur de soie is a soft, glossy silk, very durable and light in weight, delightful to the touch, and well recommended for wear.

The bolero, in all sizes and shapes, is to be worn again, and it is sometimes made of lace, quite close fitting in the back and full in front.

"The self-made man," remarked the observer of men and things, "would give more general satisfaction, doubtless, if he tried himself on a time or two before he was done."—Detroit Journal.

Gems.

The man who figures on marrying an heiress often finds he isn't well up in mathematics.

Too many people are singing "Scatter sunshine," and waiting for somebody else to do it.

Love of reading enables a man to exchange the weary hours which come to every one, for hours of delight.

Moral energy grows with the obstacles against which it is measured; and the putting forth of moral energy as the purpose of our lives is the highest exemplification of humanity. When we put forth the highest moral energy, then we touch the stars of life.—Felix Adler.

It is a vain thought to flee from the work that God appoints us for the sake of finding a greater blessing to our own souls, as if we could choose for ourselves where we shall find the fullness of the divine presence, instead of seeking it where alone it is to be found, in loving obedience.—George Eliot.

Health is the perfect balance between our organism, with all its component parts, and the outer world. It serves us especially for acquiring a knowledge of that world. Organic disturbance obliges us to set up a fresh and more spiritual equilibrium to withdraw within the soul.—Amiel's Journal.

In my dealing with my child, my Latin and Greek, my accomplishments and my money, stead me nothing; but as much soul as I have avails. If I am willful, he sets his will against mine, one for one, and leaves me, if I please, the degradation of beating him by my own superiority of strength. But, if I renounce my will and act for the soul, setting that up as umpire between us two, out of his young eyes looks the same soul; he reveres and loves with me.—Emerson.

Avarice keeps a man always in the wheel and makes him a slave for his lifetime; and his head or his hands are perpetually employed. When one project is finished his inclinations roll to another, so that his rest is only variety of labor. This evil spirit throws him into the fire and into the water and all sorts of hazards and hardships; and when he has reached the tombs, he sits naked and out of his right mind.—Jeremy Collier.

Why do we heap huge mounds of years
Before us and behind,
And scorn the little days that pass
Like angels on the wind,
Each turning round a small, sweet face
As beautiful as near?
Because it is so small a face
We will not see it clear.

We will not clasp it as it flies,
And kiss its lips and brow;
We will not bathe our weary souls
In its delicious now.
And so it turns from us and goes
Away in sad disdain;
Though we would give our lives for it,
It never comes again.

—D. M. Muloch.

"Benny," said Mr. Bloobumper, "if George Washington is the first in the hearts of his countrymen, who comes second?" "I don't know about that," replied Benny. "But Independence Day is the Fourth."—Harper's Bazar.

Leading Tragic Man: Did you see how I paralyzed the audience in the death scene? They were crying all over the house! Stage Manager: Yes; they knew you weren't really dead.—Tit-Bits.

Another Chinese Complication.—Brown (reading the news from China): How would you pronounce this name? Jones: "Liao-Tung? I guess you don't pronounce that; you yodel it.—Puck.

DOMESTIC ECONOMY.

Kitchen Lore.

UNCOOKED PUMPKIN PIE.—Two cups of grated raw pumpkin, into which put one tablespoon of flour, one-fourth cup of sugar, one teaspoon cinnamon, one-half teaspoon ginger and a beaten egg. Pour upon these ingredients a pint of rich milk, scalding hot, and bake in moderate oven.

BAKED CREAMED POTATOES.—Pare the potatoes and slice very thinly. Put a layer in a dish, season with salt, pepper and bits of butter and dust lightly with flour. Add another layer of potatoes and continue until the dish is full. Add enough rich sweet milk to show through the potatoes, but not enough to really cover them; cover the dish closely and bake in a slow oven until tender. Remove the cover and brown lightly. Serve in same dish.

BREADED BACON.—Cut bacon or other fat salt pork into neat, thin slices, and freshen by putting in cold water over the fire. When it scalds remove it, drain, and dip each slice separately into well-beaten eggs, then roll in very fine bread crumbs. Let lie a moment until crumbs have absorbed the egg. Then dip again into the beaten egg and roll in fine crumbs. Have ready a little very hot fat in a frying pan and fry quickly, turning until both sides are delicately browned, being careful that it does not scorch.

POTATO SOUP.—Pare three medium-sized potatoes, cut in dice and cook in a pint of salted water. When tender add a quart of rich, sweet milk, a lump of butter, salt and pepper and a tablespoonful of flour smoothed in a little cold milk. Let boil up nicely, stirring constantly, and add two well-beaten eggs; continue stirring for two minutes and serve hot with crisp crackers, or, what is better, with small squares of toasted bread. This is delicious. Bread may be toasted in the oven as scraps accumulate, and kept in glass jars to use as needed for soups, stews, etc.

Hints to Housekeepers.

If a clean cloth wrung out of water to which half a teaspoonful of ammonia has been added is used to wipe off a carpet which has been recently swept, the result will be that you will find the dusty look removed and the colors brightened.

A French cook never, it is said, washes the pan in which an omelet is made. It is wiped clean with pieces of paper, then rubbed dry with a cloth. In this way the omelets made in the pan are not so apt to burn. These artists in cooking lay great stress upon the quality and the care of their tools.

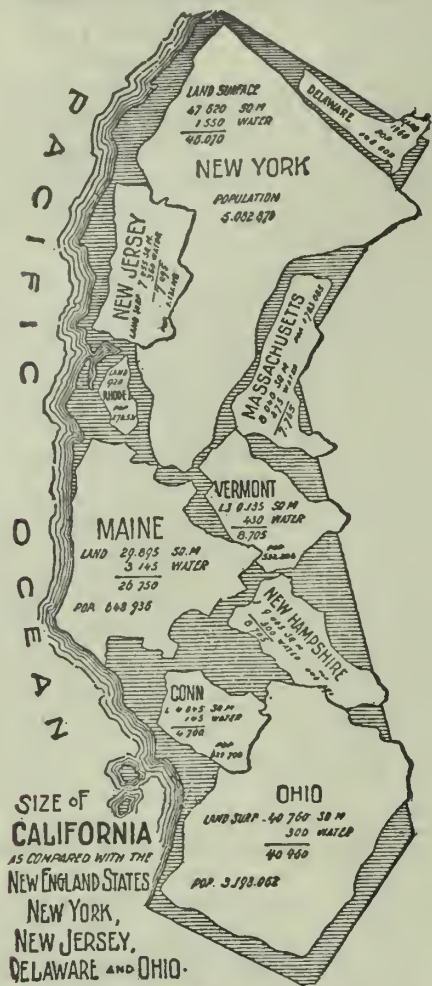
An easy and pretty way to freshen a black, white or colored silk or satin bodice is to cover it with an over-drapery in blouse style in net, lisse or chiffon, the shade of the bodice, or of a contrasting color. As there are neither darts nor side seams, the light drapery is easily adjusted, and to freshen the waist one can now purchase in any of the fancy dry-goods houses crimped or accordion-plaited textiles of various airy weaves—by the yard, and with dainty ruffles to match—in black, white, pearl, cream, ecru and fancy tints. Bows of satin ribbon on the shoulders, with straps of the ribbon carried from the bows to the belt, both front and back, would serve to keep the fullness of the chiffon in place, and thus give a slender look to the figure.

Much Pleased

Granite State Evaporator Co.
Gentlemen:—I am very much pleased with the Granite State Feed Cooker and Water Heater.
Yours very truly,
A. H. WHITE.
Vice-President American Berkshire Association.
25 gallon, \$12; 50 gallon, \$17; 100 gallon, \$24.
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COMPARATIVE AREA OF CALIFORNIA



COMPARATIVE AREA MAP OF CALIFORNIA

In addition to what the above object lesson conveys to the eye, it might not be irrelevant to state that California occupies a stretch of country on the Pacific Coast that corresponds in latitude with that portion of the Atlantic Coast bounded on the north by Plymouth Bay, in the State of Massachusetts, and by Savannah, Ga., on the south.

TOPOGRAPHY OF CALIFORNIA

CALIFORNIA has two great mountain ranges running north and south, parallel to the Pacific Ocean, and extending from the northern extremity of the State two-thirds of the way to the southern end. The one on the eastern border of the State is the Sierra Nevada; that on the western, abutting upon the ocean, the Coast Range. These two ranges meet at their northern and southern ends, and thus enclose the great interior basin, which, 450 miles long and 50 miles wide, comprises, with the contiguous foot-hill region, the bulk of the arable lands of the State.

The southern meeting point of the ranges is Tehachapi Pass. South of the Pass are numerous minor ranges, which have a general easterly and westerly trend. The principal of these is the Sierra Madre, north of Los Angeles, and the San Bernardino Range, east of Los Angeles.

The great basin north of Tehachapi Pass is drained by two principal rivers, the Sacramento in the northern end, flowing south, and the San Joaquin in the southern end, flowing north. These meet midway in the great basin, and as a single stream, flow westward through a break in the Coast Range, emptying into the Bay of San Francisco, and thence reaching the ocean through the Golden Gate. These two rivers are perennial, and are navigable as far as Marysville on the north and Stockton on the South.


The rivers in the southern part of the State are mainly torrential, not navigable, and, with the exception of the Santa Ana, which irrigates the orange groves of the Riverside region, are dry in summer.

The Klamath River, in the northern end of the State, is the only stream of consequence, besides the combined Sacramento and San Joaquin Rivers, that breaks through the Coast Ranges and empties into the ocean.

Many of the most picturesque and highly developed regions are the minor valleys distributed through the Coast Range. Principal among these are the wine and fruit valleys of Santa Clara, Sonoma, and Napa; and in the southern part of the State, the Ojai, San Gabriel, and Santa Ana.

California has a frontage of more than 700 miles on the Pacific Ocean; yet, although its variety is remarkable, and its picturesqueness alluring, it is one of the spectacular features that is hardly ever heard of by the traveler, by reason of the fact that it has been made accessible at very few points by regular lines of travel.

The coast generally abounds in bold headlands and promontories, not unlike the western coast of Scotland in ruggedness, and, in its seaward aspect, presenting a high breast to a foaming, thundering sea.



OSBORNE FARM IMPLEMENTS

The largest complete line of farm machinery manufactured by any single concern in the world; embraces:

Osborne Columbia Horse Hoe and Cultivators,
Adjustable Peg-Tooth Harrows,
Osborne Combination Harrows,
Columbia Flexible & Reversible Disc Harrows,
Columbia Inclined Corn Harvester & Binder,
Columbia Mower, (1 & 2-horse)
Columbia Grain Harvester and Binder,
Columbia Reaper,
No. 8 Reaper, etc.

Every machine is fully warranted and is the best of its class that can be produced with good material, complete equipment, superior skill and long experience.

The cut shown here is that of our OSBORNE COLUMBIA HORSE HOE AND CULTIVATOR, which, taken as a whole is one of the most perfect farm implements made. It is an ideal implement for cultivating all kinds of hoed crops. We make it in five patterns, each with 5 teeth. No. 1 is a simple cultivator with hand screw adjustment of the spreading device. No. 2 is the same as No. 1 but has front wheel. No. 3 has no wheel but has lever spreading device. No. 4, has wheel and 1 lever for spreading shovels, and No. 5, (see cut) has both wheel and spreading device with levers for regulating both.

Don't Buy until you have seen our local Agent. They are adjustable to any width of row. Made entirely of malleable iron and steel except the handles. Different kinds of shovels for different kinds of work. **Handy Book on Farm and House FREE.**

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BAY CITY IRON WORKS,

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PATENT TAPER BOILERS

Are the Easiest Steaming
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Old Threshing Engines Repaired and
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Extras for Rice, and Mitchell, Fischer and
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Krogh Manufacturing Co.,

WORKS: 9 TO 17 STEVENSON STREET, SAN FRANCISCO, CAL.

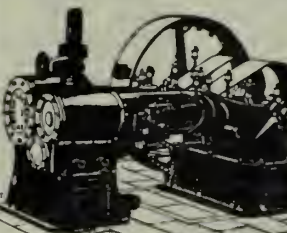


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GENERAL CONTRACTORS FOR
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Corliss Steam Engines, Automatic High-Speed Engines,
Link Chain, Elevators, Centrifugal Pumps, Windmills,
Horse Powers, Boilers, Pipe, Fittings, Etc.

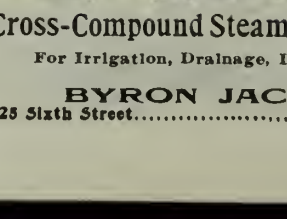
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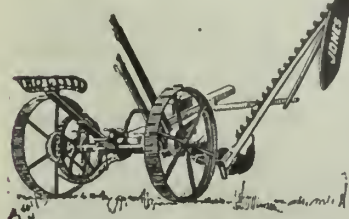


Cross-Compound Steam Engines and "Whirlpool" Centrifugal Pumps

For Irrigation, Drainage, Dredging, Mining, Etc. Capacities from 50 to 50,000
Gallons Per Minute.

BYRON JACKSON MACHINE WORKS,
625 Sixth Street.....San Francisco.





The Jones Chain Mower.

UNLIKE GEARED MOWERS
IT HAS

NO NOISE! NO VIBRATION!
NO LOST POWER!
NO COG WHEELS TO WEAR OUT!
NO BACKING UP TO START IN THE GRASS.

THE JONES ALL STEEL HAY RAKE -- THE ONLY ADJUSTABLE HAY RAKE MADE.

H. C. SHAW PLOW WORKS, Stockton, Cal.

ANTHRAX and BLACK LEG

PREVENTED BY

Pasteur "Vaccines."

Write for particulars, prices, and testimonials of thousands of American stockmen who have successfully used these remedies during the last three years.

PASTEUR VACCINE CO., 54 Fifth Ave., Chicago.

A COLD chisel for heavy chipping should be sharpened slightly oval or rounding. A tool sharpened thus will stand harder usage than when the cutting edge is concave, or even straight. The reason for this is based upon the strength of the arch. The engineer builds a dam across a stream in the shape of a curve for the same reason, and both the engineer and the beaver, in his native stream, obeys the same law in regard to this matter. Aside from the principle of the arch, there is less danger of breaking the corners off of a chisel when the edge is curved, for then the force of the blow is supported in a brace-like manner by the metal in the curved corners, whereas in the concave point the same bracing action, applied in the opposite direction, tends to split off the corners of the tool. The matter is so simple that every machinist should take advantage of it to add strength and durability to his tools. The same shape can be given to screwdrivers when they are to be used in chucks on work like that of putting screws into shoemakers' lasts. Thousands of screws are thus put in, and it is found that if the end of the screwdriver is rounded off the least possible amount it is much easier to make the tool bit engage the slot in the screw. When the bit is the least amount concave on the end, it is impossible to make the screwdriver take hold when running even at a low working speed. Make the end of the tool convex one-thirty-second of an inch, and the speed at which the tool can be put into a screw slot will be doubled.

MANY amateur photographers fail owing to the ignoring of a few simple rules. An authority says that the beginner should buy a light stand, fill his magazine or slides with ordinary plates and practice time exposures on all sorts of still objects till he can turn out a good negative with a fair degree of certainty, and has mastered the elements of development. With the perfect plates and pure chemicals available nowadays, this should soon be accomplished. Snap-shooting may then be taken up. A stand should be used, as the vibrations of the human body are most mischievous in their effect on the plate. The plates should be only fairly rapid, as the very fast plates mean fog and disappointment to the beginner. If the operator would avoid pinholes, he must be jealously on his guard against dust. The camera should be frequently dusted out, and the inside smeared with thin vaseline, which collects and holds a large quantity of the dust caused by the powder of abraded glass chips and other causes. A golden rule is not to snap at random. Never expose a plate on a subject that will not, when developed and printed, be a credit to the album. For a resting place, if no better is at hand, use one knee, going down on the other to secure additional steadiness. Many photographers put the camera under the arm and press it to the side. The beginner will soon find which way suits him best. There is no hard and fast rule about exposures, but the following periods are recommended for general purposes: Wave studies, waterfalls and rapid rivers, one-fifth to one-tenth second; street studies, with no fast-moving horses or cycles within fifty yards, one-twentieth to one-thirtieth second; slow-sailing vessels or quick steamers, end on, about one-twentieth to one-thirtieth second; ordinary work and athletic sports, one-fiftieth to one-eighthieth second; rapid finishes, one-one hundred and twentieth second, or over. Above all avoid the besetting sin of beginners, which is to set the shutter at too high a speed. Number every hand camera plate, entering full details of exposure, subject, light, etc., in a notebook against corresponding number.

PERCHOID is a new product, and a substitute for gutta percha, the supply of which has of late shown such disquieting signs of collapse. Perchoid, the invention of Dr. Napier Ford, is oil which has undergone a high degree of oxidation. Dr. Ford experimented for many years to produce a method whereby oil could be fully oxidized, and at last he succeeded. The result is perchoid. The oil is heated with litharge, stirred long and continuously, and then allowed to cool. Specially prepared tow is then dipped in it, and, placed in wire baskets, subjected to currents of air. The oil adhering to the filaments of the hemp becomes wholly oxidized. Under the microscope the hempen threads appear sheathed with a coating of amber. This is done through rollers and comes out as a leathery material, closely allied to, if not identical with, rubber. Its tenacity is increased by mixing it with sulphur. It can be rolled as thin as a piece of tissue paper and any fabric, and it makes leather impervious to moisture, though not to air. It is said to be eight times cheaper than rubber and more durable. One of its great fields will probably be the making of pneumatic tires. It is stated that a chemical manufacturer in London, whose hydrochloric acid tank used to be lined with gutta percha at a cost of \$50, had a lining made of perchoid for \$1.50, which serves just as well. Perchoid should be a godsend to the electrician, as it never becomes brittle, and never leaves the wire, two most valuable qualities in an insulator.

Wife of Klondike Miner: I want some money for the house. Klondike Miner: What! Have you spent all the mud that was on my boots yesterday.

Arthur: They say, dear, that people who live together get to look alike. Kate: Then you must consider my refusal as final.

WORLD'S BUTTER CHAMPIONS

EVERY ONE AN "ALPHA-DE LAVAL" USER.

THERE have now been six Annual Conventions and Grand Competitive Butter Contests of the National Buttermakers Association,—1892, 1893, (none in 1894), 1895, 1896, 1897 and 1898. The following is the list of years, places of convention, names and addresses of Sweepstakes Gold Medal winners, and the highest scores. Every prize winning exhibit has been "Alpha-De Laval" made butter:

| | |
|--|----------|
| 1892, Madison, Wis., LOUIS BRAHE, Washington, Iowa, | Score 98 |
| 1893, Dubuque, Iowa, C. W. SMITH, Colvin's Park, Ill., | " 97 |
| 1895, Rockford, Ill., F. C. OLTROGGE, Tripoli, Iowa, | " 98 |
| 1896, Cedar Rapids, Iowa, THOS. MILTON, St. Paul, Minn., | " 97.82 |
| 1897, Owatonna, Minn., H. N. MILLER, Randall, Iowa, | " 98.5 |
| 1898, Topeka, Kas., SAML. HAUGDAHL, New Sweden, Minn., | " 98 |

Everyone knows that the cream separator does not make the butter and likewise every experienced buttermaker knows that the "Alpha-De Laval" disc system of separation is not only the most thorough but that it at same time delivers the cream into the hands of the buttermaker in better condition for perfect buttermaking than is possible with any other separator or system.

The reasons for this are as simple and as certain as gravity itself. If you do not understand them and would like to know them send for "Dairy" catalogue No. 257 or "Creamery" catalogue No. 508.

THE DE LAVAL SEPARATOR CO.

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| Western Offices: | GENERAL OFFICES: | Branch Offices: |
| RANDOLPH & CANAL STS. | 74 CORTLANDT STREET, | 1102 ARCH STREET, |
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Don't Be Careless.

Don't guess what your cows are doing, but KNOW.
Don't think your cows are all right when you can KNOW.
Don't use an inaccurate Babcock Test.
Don't let your creamery man skin you; keep a check on him.
Send to us for a first-class ten-dollar

No-Tin Babcock Test

and let your creamery man know that you have it. Let six of you club together and get six machines for fifty dollars. They are well made—regular life lasters.

Elgin Mfg. Co., Elgin, Ill.

DEWEY, STRONG & Co., PATENT SOLICITORS,

330 MARKET STREET, - SAN FRANCISCO, CAL.

Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced first-class agency. We have able and trustworthy associates and agents in Washington and the capital cities of the principal nations of the world. In connection with our scientific and Patent Law Library, and record of original cases in our office, we have other advantages far beyond those which can be offered home inventors by other agencies. The information accumulated through long and careful practice before the Office, and the frequent examination of patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us to give advice which will save inventors the expense of applying for patents upon inventions which are not new. Circulars and advice sent free on receipt of postage. Address DEWEY, STRONG & CO., Patent Agents, 330 Market St., San Francisco, Cal.

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TO 183-185-187 FREMONT STREET,

Where, with Enlarged and Increased Facilities, they are better than ever prepared to do

First-Class Machine Work

Promptly, and at Reasonable Prices, and will continue the manufacture of

Thomson & Evans Steam Pumps,

Deep Well Pumps, Power Pumps, Etc.,
Also Marine Engines, Ship and Steamboat Work,
Pipe Cutting, General Jobbing and Repairing.



TANKS! When you buy a Water Tank get one that will not dry out and shrink.

—THE—
Patent Non-Shrinking Water Tank,

The only one suitable for dry, hot climates. COSTS NO MORE THAN COMMON.

Ask your dealer, or write to

PACIFIC TANK CO., Sole Manufacturers,
City Offices: 33 BEALE STREET,.....SAN FRANCISCO.

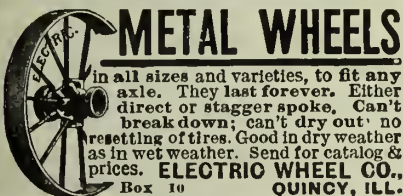
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Permanently cured by using DR. WHITEHALL'S RHEUMATIC CURE. The surest and the best. Sample sent free on mention of this publication. THE DR. WHITEHALL MCGRIMME CO., South Bend Indiana

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lightens
the
load—
shortens
the
road.

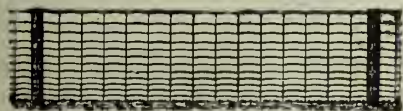
Makes the wagon pull easier,
helps the team. Saves wear
and expense. Sold
everywhere.



Don't Go To Alaska

Unless you see the OUTFITS sold by the
Home Supply Co., 217-221 Drumm St., S. F.

They are outfitting a great many Klondikers—packing and shipping goods most satisfactorily. Their prices are very low for high-grade goods. Send for their Alaska Price List, Free.



"Fixin' Fences"

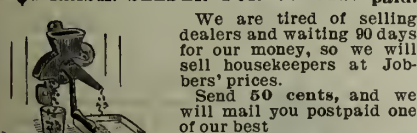
every spring is needless. No "top rails" to lay on, nor need to chase down the lane after every storm if Page Fence is used. Send for "spring styles" and prices. See our ad. In next issue.

PAGE WOVEN WIRE FENCE CO., Adrian, Mich.



MEAD CYCLE CO., 299 Ave. H, Chicago.

A \$1 RAISIN SEEDER FOR 50 CTS. Post-paid.



We are tired of selling dealers and waiting 90 days for our money, so we will sell housekeepers at Jobbers' prices.
Send 50 cents, and we will mail you postpaid one of our best
Bay State Raisin Seeders.
Guaranteed to seed 1 lb. of raisins in 5 minutes. Simple to operate and easy to clean.
Easton Specialty Mfg. Co., 64 Federal St., Boston.

Coast Industrial Notes.

—Hay in San Francisco is selling for \$23 per ton, the highest price in fifteen years.

—From Sydney, N. S. W., the steamship Alameda for San Francisco has on board £500,000 in gold. The amount forwarded in the last eight months aggregates \$17,500,000.

—The output of petroleum at Summerland, Santa Barbara county, Cal., is increasing. The *Advance-Courier* says: Sixty carloads, 8000 barrels of oil, left Summerland this month.

—At Marysville, Cal., last Monday, the Blue Lakes Water Co. connected with the power plant of the Yuba Power Co., which produces its current from generators operated by 2500 inches of water under a head of 295 feet, twenty-three miles distant in the Sierra Nevada.

—Prof. Frank Soule, dean of the College of Civil Engineering of the University of California, and instructor L. E. Hunt have recently been testing the strength and quality of California marbles. The results of the experiments, says the *Times*, show that the California marbles possess remarkable strength. They are crushed at a pressure of from 250 to 1000 pounds to the square inch—more than twice the strength of foreign marbles.

—The Fresno, Cal., *Erpositor* says the last mile of wire of the power line between Fresno and Hanford of the San Joaquin Electric Co. is put in place, and the line is now ready for use. It will be April 1st before the extension will be in operation. The delay is caused by the electric supply company being unable to supply the motors and step-down transformers in time. This is the longest transmission line in the United States, and electricians are watching the outcome of the venture with much interest.

—Last year an American firm secured a concession from the Royal Government to construct a railroad in Corea, the first and only one in that country, and its construction and equipment have gone steadily forward. The railroad is of the American standard gauge—4 feet 8½ inches—and extends from Seoul, the capital of Corea, in the north, to Chemulpo, the chief seaport, in the south, a distance of twenty-five miles. The locomotives are of the six-coupled side-tank type, with cylinders 14 inches diameter by 22 inches stroke.

—Pres. A. H. Paget of the Chihuahua and Pacific Railroad Co. signed a contract last week with the Nassau Construction Co. of New York City, for the construction of a steam railroad in Mexico, from the sea to the silver mining regions of that country. The total distance from Chihuahua to the Gulf of California is 350 miles, and under the terms of the contract 120 miles are to be completed before November 1. The chief owners of the railway company are Col. O. H. Payne, Moore & Schley and Mr. Paget. The contract is the largest made in this country for steam railroad construction since 1893.

—The progress of the Trans-Siberian railway is such that the Russian press states that the Minister of Ways and Communication has opened freight and passenger traffic on the Obi-Krasnojarsk section and along the Tomsk branch line. A regular service of trains has already been established between Irkutsk, in Western Siberia, and the Obi, a distance of 2600 versts. The rolling stock now in use has already proved to be insufficient for the demands made upon it. In consequence of this deficiency, an immense quantity of freight could not be carried, and even now a considerable amount of freight cannot be conveyed by rail. Considerable more rolling stock will be required, and the opportunities for manufacturers to make sales for this road are considered good.

—For several years a railroad over the Andes, connecting Santiago, the capital of Chili, with the transportation system of the Argentine Republic, has been under construction. Several contractors have in these years abandoned the work. The Argentine government has extended its lines to the boundaries of Chili and the Chilians have laid tracks to the snow line of the Andes. M. P. Grace, of W. R. Grace & Co., is reported negotiating with the Chilian government for a contract to complete the roads. If he takes the contract to complete the trans-Andean railroad it will be finished on time. There is another enterprise on foot for the construction of a railroad through another pass in the Andes at a much lower altitude, 100 miles south of Santiago and west of the city of Talcahuano. It is claimed that the expense and difficulties will be less.

Thos. A. Edison writes: "I wish to protest against many articles appearing in the sensational newspapers from time to time purporting to be interviews with me about wonderful inventions and discoveries made or to be made by myself. Scarcely a single one is authentic, and the statements purporting to be made by me are the in-

ventions of the reporter. The public are led from these articles to draw conclusions just the opposite of fact. I have never made it a practice to work on any line not purely practical and useful."

A Thoughtful Answer.—"What's the first step toward the digestion of the food?" asked the teacher. Up went the hand of a black-haired little fellow, who exclaimed, with eagerness: "Bite it off! Bite it off!"—*American Kitchen Magazine*.

A FARMER'S MISHAP.

JUMPS FROM HIS WAGON AND IS BADLY INJURED.

Injuries Which Gilbert Updegraff Sustained. Much Suffering Endured—How He Obtained Relief.

From the Democrat, Goshen, Ind.

Gilbert Updegraff, a prosperous farmer living near Goshen, Ind., in jumping from his wagon onto a board, a few days ago, met with a serious accident.

It was feared at first that this accident was aggravated by rheumatism, which ailment Mr. Updegraff was troubled with some time ago in an unusually severe form. In speaking of it he says:

"About two years ago I was stricken with rheumatism, and for a year was severely troubled with it. It came on me suddenly during the winter, I don't know what caused it, unless it was exposure, about the farm.

"It was the old fashioned rheumatism and began in my lower limbs, gradually working up until my arms, hands and fingers became affected. My body ached all over, especially my limbs, which were swollen and these by the following spring were almost entirely useless. I had to hire all my work done that spring and summer, but did a little work in harvest time.

"I must have done too much, for soon after that I was confined to my bed for some time. I had the family doctor, but he didn't do me any good. He finally said he could not help me and advised me to try the baths, but I couldn't afford the expense. Neither could I afford to be an invalid all my life. Inquiries were made at the drug store for something that would be helpful in my case.

"The druggist recommended several things, and I tried some of them, but was not benefited until I used Dr. Williams' Pink Pills for Pale People. I gave this remedy a fair trial as I did the others, and soon discovered that it was different from anything I had tried.

"I found that this was a medicine that did what was claimed for it, and when I had taken about a dozen doses of the pills I found that they were helping me. I continued taking them, and I am glad to-day that I did. Why that medicine actually cured me and I didn't take more than six or seven boxes either.

"It was in January, 1897, that I began taking the medicine, and I was completely cured by the first of March. I began early in the spring to do my work, and I kept it up all summer, not missing a day. I have never had any rheumatic trouble with my limbs from that day to this.

"And are you positive that it was Dr. Williams' Pink Pills for Pale People that cured you?" asked the reporter.

"Positive, why of course I am. Nothing else did it. I did not take any other medicine at the time, and I was never better until I began taking Dr. Williams' Pink Pills for Pale People. I have taken nothing else since, and of course they are what did the work." Mrs. Updegraff agreed with her husband that "he was cured of a very severe case of rheumatism by these pills."

What better proof could a person want than the above facts. This plainly shows that Dr. Williams' Pink Pills for Pale People are unrivaled as a tonic for the blood. The secret of perfect health, strength and beauty is pure blood, and impure blood is the foundation of most diseases.

One of the first to discover this fact was Dr. Williams, who years ago formulated a combination of vegetable remedies which acts on the impure and impoverished blood, imparting those elements that purify, vitalize and enrich it, thus aiding bodily functions, arousing every organ into healthful action, and in this way restoring the entire system to health and vigor.

That Dr. Williams' Pink Pills for Pale People do this has been attested to by thousands all over our land and in foreign climes. These marvelous health restorers are prescribed by physicians, endorsed by druggists and used by people everywhere.

Cocoanut Oil Cake.

THE BEST FEED FOR STOCK, CHICKENS AND PIGS.

For sale in lots to suit by

EL DORADO LINSEED OIL WORKS CO. 208 California St., San Francisco, Cal.

TREE WASH, OLIVE DIP.

"Greenbank" Powdered Caustic Soda and Pure Potash.

T. W. JACKSON & CO. Sole Agents. - - No. 226 Market Street, SAN FRANCISCO, CAL.

They stop work, cost money, give pain.

Sprains and Bruises

It costs little to cure St. Jacobs Oil. It saves time, them right away with money, misery.

GOPHERS OR SQUIRRELS

Safely, successfully and economically DESTROYED with

PASTEUR VIRUS (Improved).

PASTEUR VACCINE CO., 54 Fifth Ave., Chicago.

FOR 14 CENTS

We wish to gain 150,000 new customers, and hence offer

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| 1 Pkg. Early Spring Turnip, | 10c |
| 1 " Earliest Red Beet, | 10c |
| 1 " Bismarck Cucumber, | 10c |
| 1 " Queen Victoria Lettuce, | 10c |
| 1 " Klondike Melon, | 10c |
| 1 " Jumbo Giant Onion, | 10c |
| 3 " Brilliant Flower Seeds, | 15c |

Worth \$1.00, for 14 cents.

Above 10 pkgs. worth \$1.00, we will mail you free, together with our great Plant and Seed Catalogue upon receipt of this notice and 14c. postage. We invite your trade and know when you once try Salzer's seeds you will never get along without them. Potatoes at \$1.50 a Bbl. Catalogue 5c. No. 27

JOHN A. S. LA SEED CO., LA CROSSE, WIS.

For Planting Season of 1898

We offer for sale a choice lot of

Budded Orange and Lemon Trees,

One and two-year buds of the leading varieties, on sour or sweet stock.

Prices to Suit the Times.

SEEDLING ORANGE TREES at your own price. Correspondence solicited.

Oroville Citrus Association, Oroville, Butte Co., Cal.

ROSES!

10 Ever-Blooming, Field-Grown Roses for \$1.

Eight thousand Roses, field-grown, two-year-old plants, have to be closed out. These consist of the best ever-blooming varieties, and will be sold at 10 plants for One Dollar, sent by express or delivered in the city of San Francisco. These Roses are in first-class condition and are bound to give satisfaction. No order filled for less than One Dollar. I name a few varieties, as space does not permit of the naming of the whole list: Aurora, Archduchess Marie Immaculata, Bon Sella, Bongere, Beauty of Stapleford, Cath. Mermet, Cheshunt Hybrid, La France, Celine Forrester, Cameos, Capt. Christy, C. Riza du Parc, Cecil Brunner, Duchesse de Brabant, Duchesse of Albany, Dr. Pasteur, Etoile de Lyon, Eliza Sauvage, Francisca Kruger, Gen. Dubois, Fursten Blumark, Gen. de Tartar, Jean Ducher, La Marque, Mad. Cochet, Desire, Faicot, Hoste, Lambert, Schwallier, M. v. Houtte, Malmajon, Sunset, Queen, Papa Goutier, Rainbow, and a good many other varieties. F. LUDEMANN, Pacific Nursery, Baker and Lombard Sts., San Francisco, Cal.

IMPROVED FRESNO SCRAPER.

5-Foot. Weight, 300 Lbs.



NEW STOCK. NEW PRICES.

Hooker & Co., 16 and 18 Drumm St., San Francisco.



HAZARD POWDER.

It is Quick, Clean, Strong And Reliable.

ALANSON H. PHELPS, Agt., 421 MARKET ST., San Francisco, Cal.

DO YOU SUFFER?

WE CAN HELP YOU.

Write to Us in Confidence and If We Cannot Help You We Will Say So.

Ten Years' Experience Has Proven to Us That We Have the

GREATEST MEDICINE IN THE WORLD.

The Only Remedy Endorsed by the Supreme Court of New York, etc., etc.

Write or Call for Pamphlet. "Disease: Its Cause and Cure," Free on Application.

RADAM'S MICROBE KILLER CO., 1340 MARKET ST., SAN FRANCISCO, CAL.

—BRANCHES:—

216 S. Broadway, Los Angeles, Cal.
44 S. Second St., San Jose, Cal.
360 Morrison St., Portland, Or.
1010 First Avenue, Seattle, Wash.

FORTIFY YOURSELF

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S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, March 30, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|---------------|-------------|
| Wednesday..... | \$1 06½@1 04½ | \$ 86 @ 84½ |
| Thursday..... | 1 04½@1 04 | 84½@ 82½ |
| Friday..... | 1 03 @ 1 04 | 81½@ 82½ |
| Saturday..... | 1 04 @ — | 82½@ 83½ |
| Monday..... | 1 03½@ 1 05½ | 82½@ 84½ |
| Tuesday..... | 1 03½@ 1 04½ | 83½@ 81½ |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|--------|---------|
| Wednesday..... | 7s 5½d | 7s 01½d |
| Thursday..... | 7s 5 d | 7s 00¾d |
| Friday..... | 7s 4½d | 6s 11½d |
| Saturday..... | 7s 4½d | 7s 00 d |
| Monday..... | 7s 5½d | 7s 00¾d |
| Tuesday..... | 7s 5 d | 7s 00¾d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|---------------|--------------|
| Thursday..... | \$1 45½@1 44½ | \$1 36½@1 36 |
| Friday..... | 1 43½@1 44½ | 1 35½@1 36 |
| Saturday..... | 1 46½@1 45½ | 1 37 @ 1 38 |
| Monday..... | 1 46½@1 48½ | 1 38½@1 40½ |
| Tuesday..... | 1 47 @ 1 48 | 1 39½@1 41½ |
| Wednesday..... | 1 47½@1 46½ | 1 40½@1 39½ |

Wheat.

The wheat market is more unfavorable to buyers than a week ago, but the actual appreciation in values for spot wheat is difficult to determine, from the fact that business in the sample market has been virtually at a deadlock, shippers doing nothing and millers making no purchases of consequence. According to holders' views, wheat is worth fully a dollar per ton more than last quoted. Taking the views of exporters as a basis, the figures of a week ago would be too high to-day. Nominally there has been a quotable advance of 50c@\$1 per ton. Foreign markets have fluctuated very little. In fact, Liverpool options were slightly lower for remote deliveries than previous week. The Chicago speculative market blew hot and cold, was up and down, as the news regarding existing complications between the United States and Spain were pacific or warlike. On the San Francisco Call Board there was an advance of fully 2½c for May and 5c for December, brought about mainly by local causes, the dry weather being the principal factor.

The month of March made a good beginning in the matter of wheat exports, but the record during the latter part of the month was decidedly poor. During the first fourteen days, eleven wheat cargoes were cleared from this port, averaging nearly one ship for each working day and aggregating the same number as for the entire month of February. One wheat ship cleared for Liverpool on the 28th. During the thirteen days following the 14th of March there was not, however, the clearance of a wheat ship from this port. On very few occasions in the past thirty years has such a period elapsed without a cargo of grain being cleared through the San Francisco custom house. Several causes have contributed to this lethargy in the California wheat trade, prominent among them being the dry weather experienced much of the time and giving poor prospects for coming crop in a large area of the State. In addition, the rather light supplies of wheat remaining in the interior, and the failure of foreign markets to improve appreciably in consequence of the crop outlook here, made it impossible for any noteworthy trading on export account to be consummated. While the crop in a large portion of the southern part of the State will undoubtedly be light this season, the harvest in most of the northern counties, as well as in Oregon and Washington, promises to be fully up to, and may prove above, the average. The light yield south will be partly compensated for later on by increased returns which are sure to be realized in consequence of the soil being able to recover strength, as it is certain to do in a season like the present.

| | |
|-------------------------------------|---------------|
| California Milling..... | \$1 50 @ 1 55 |
| Cal. No. 1 shipping, alongside..... | 1 45 @ 1 47½ |
| Oregon Valley..... | 1 45 @ 1 47½ |
| Walla Walla Blue Stem..... | 1 45 @ 1 52½ |
| Walla Walla Club..... | 1 40 @ 1 45 |

CALL BOARD PRICES.

On San Francisco Call Board prices for No 1 white wheat per cental for the week were as follows for the options named:

| |
|--|
| May, 1898, delivery, \$1.43@1.48½. |
| December, 1898, delivery, \$1.35½@1.41½. |
| Wednesday, at regular noon session of Call Board, May wheat sold at \$1.47½@1.46½; |
| December, 1898, \$1.40½@1.39½. |

Ocean freights and prices for wheat, as

compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|-------------|--------------|
| Liv. quotations..... | 6s3d@6s4½d | 7s9½d@7s10½d |
| Freight rates..... | 15@16½s | 22½@—s |
| Local market..... | \$1.35@1.40 | \$1.45@1.50 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

While the market is nominally higher than it was two weeks ago, much of the wholesale and jobbing business transacted in the meantime has been at figures very close to those current before the last official advance was announced. This is the workings of an old dodge by brokers. When an advance is proclaimed they roll in orders in lively fashion, dating them back so as to have them filled at old figures, sometimes entering up orders without authority, feeling certain that under the circumstances the flour will be taken by the parties to whom it is charged, and that the brokerage will be made.

| | |
|---------------------------------|-------------|
| Superfine, lower grades..... | \$3 25@3 40 |
| Superfine, good to choice..... | 3 50@3 80 |
| Country grades, extras..... | 4 20@4 50 |
| Choice and extra choice..... | 4 50@4 70 |
| Fancy brands, jobbing..... | 4 75@4 90 |
| Oregon, Bakers' extra..... | 4 10@4 40 |
| Walla Walla, Bakers' extra..... | 4 10@4 40 |

Barley.

Further strength has been developed in the market for barley since last review, although crop conditions are a little more favorable in some portions of the State than a week ago. While prices are comparatively high, if only a few years past are taken into consideration, they are still on much lower levels than have been experienced in some seasons not very remote and not particularly dry. Values in the spot or sample market since last review have been more in accord with prices in the speculative market than during preceding week, the actual grain having shown more appreciation in quotable rates than did values for May option, the latter being the nearest in the speculative field to immediate deliveries. December option, which is the representative on Call Board of new crop, sold at higher figures than last week. The appreciation of the latter has practically closed the gap lately existing between the two options.

| | |
|---------------------------------|-------------|
| Feed, No. 1 to choice..... | 1 20 @ 1 25 |
| Feed, fair to good..... | 1 17½@1 20 |
| Brewing, No. 1 to choice..... | 1 25 @ 1 30 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

| |
|---|
| May, 1898, delivery, \$1.15@1.22½. |
| December, 1898, delivery, \$1.11@1.22. |
| Wednesday at regular noon session of the Call Board May, 1898, feed sold at \$1.20; |
| Dec., 1898, \$1.19½@1.20c. |

Oats.

Market is firm for all feed and milling descriptions and is likely to continue rather favorable to sellers during the balance of the season. The strength of the market is mainly attributable to the recent sharp advance in barley. There are no very radical changes to record in quotable values for oats, but such as did occur during the week were all to improved figures. Receipts were of fair proportions. The demand for Black and Red oats for seeding purposes continued light, and values for these descriptions remained without improvement.

| | |
|-------------------------------|--------------|
| White Oats, fancy feed..... | 1 30 @ 1 35 |
| White, good to choice..... | 1 25 @ 1 30 |
| White, poor to fair..... | 1 20 @ 1 25 |
| Gray, common to choice..... | 1 20 @ 1 25 |
| Milling..... | 1 25 @ 1 30 |
| Surprise, good to choice..... | 1 30 @ 1 37½ |
| Black Russian..... | 1 35 @ 1 50 |
| Red..... | 1 30 @ 1 45 |

Corn.

Values for this cereal continue in about same position as last quoted, but market shows a firm tone, and with anything like active inquiry, a further hardening in prices would very likely be experienced. There are no large quantities arriving or offering at present of either imported or domestic products.

| | |
|----------------------------------|--------------|
| Large White, good to choice..... | 1 12½@1 17½ |
| Large Yellow..... | 1 10 @ 1 12½ |
| Small Yellow..... | 1 15 @ 1 17½ |
| Eastern Yellow..... | 1 07½@1 10 |
| Egyptian White..... | — @ — |
| Popcorn, shelled, ½ lb..... | — @ — |

Rye.

A stiff market is noted, with very little offering and no likelihood of supplies being materially increased during the balance of the season.

| | |
|--------------------------|--------------|
| Good to choice, new..... | 1 15 @ 1 17½ |
|--------------------------|--------------|

Buckwheat.

Spot supplies are extremely light and there is so little doing that values at present are not very clearly defined. Market tends against buyers.

| | |
|---------------------|-------------|
| Good to choice..... | 1 75 @ 1 90 |
| Silverskin..... | — @ — |

Beans.

Asking rates for beans of every variety are much the same as for several weeks preceding, but buyers are not taking hold in as active fashion as holders would like to see. If selling pressure were exerted, present values could not be sustained, especially on the higher priced colored varieties. On the other hand, an active demand, no matter for what variety, would tend to immediately stiffen prices for the particular kind or kinds inquired for. Recent business has been mainly in the cheaper white descriptions.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 50 @ 1 60 |
| Small White, good to choice..... | 1 50 @ 1 60 |
| Lady Washington..... | 1 45 @ 1 55 |
| Butter, small..... | 1 45 @ 1 55 |
| Butter, large..... | 1 60 @ 1 75 |
| Pinks..... | 2 35 @ 2 60 |
| Bayos, good to choice..... | 2 80 @ 2 90 |
| Reds..... | 2 00 @ 2 25 |
| Red Kidneys..... | 2 00 @ 2 25 |
| Limas, good to choice..... | 2 10 @ 2 25 |
| Black-eye Beans..... | 2 35 @ 2 60 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

Recent advices from New York by mail report the bean market in that center as follows, prices quoted being per bushel of 60 pounds:

Jobbing business in State Marrow beans has been exceedingly dull again this week, but quite a quantity of stock has been taken by exporters and this has kept the market fairly steady at \$1.37½@1.40. A good many Canadian Medium have passed through this port in transit for export, but otherwise business has been slack and values have declined a little further; best stock can now be bought at \$1.12½. Pea have settled to \$1.10, at which it is easier to buy than to sell choice marks; very good lots are shaded to \$1.07½, and good Michigan beans in bags are offering at \$1.02½@1.05. For some reason there is very limited outlet for all that class of stock. Exporters have bought moderately of Red Kidney and have paid \$1.67½@1.70 f. o. b. for finest quality, giving preference to large-sized barrels. Small lots have been sold to local dealers at irregular prices, generally 50¢@10¢ below shippers' rates. A few White Kidney have sold to exporters at about former prices; but the supply and demand are light. Turtle Soup still very dull and declining. No inquiry for Yellow Eye. Lima are lower; best new stock offering in a jobbing way at \$1.50, and good-sized lots can be bought for less. The movement in green peas is very light, and further weakness has been developed.

Dried Peas.

The market in this center is not burdened with offerings of either Green or Niles. Tolerably stiff figures are being realized for choice, especially in a small jobbing way. Seriously defective qualities could not be placed at inside quotation.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 90 @ 2 10 |
| Niles Peas..... | 1 60 @ 1 75 |

Wool.

Spring wool is arriving, but in much lighter quantity than at corresponding date a year ago. The condition of the Southern wools, those now coming forward, is not as good as last season. The wools from the North are likely to prove of good average quality, as the sheep there are reported in generally fine shape, with plenty of feed. Nothing of consequence has yet been done in this season's clip, and quotations cannot be given. It may be possible in about a week to give some idea of probable values.

| | | |
|-----------------------------------|---------|------|
| | SPRING. | |
| Oregon Eastern, choice..... | 12 | @ 14 |
| Oregon Eastern, fair to good..... | 10 | @ 11 |
| | FALL. | |
| Northern, free..... | 11 | @ 13 |
| Southern Mountain..... | 9 | @ 12 |

Hops.

Hops are ruling very quiet in this center and cannot be said to incline in favor of the selling interest. There are no large quantities offering in local market from first hands, but no anxiety to buy is manifested on the part of either shippers or local jobbers. Former quotations are continued, with the remark that they are more in accord with the views of sellers than of buyers. There are some who still pin faith to the future of the market, believing that more activity and firmness will be realized; but present conditions do not warrant anticipating any strength or activity for some months to come.

| | |
|--------------------------------|---------|
| Good to choice, 1897 crop..... | 12 @ 16 |
|--------------------------------|---------|

The following review of the hop market is from a New York authority and comes through by mail of late date:

The market has got into a very dull rut, and absence of important demand from any source is causing depression and weakness. This is not so noticeable in the prime and choice grades, because these comprise only a small part of present holdings; but there has been pressure to sell low grade hops with a consequent decline in values for such. The fact is that several thousand bales of poor moldy Oregon hops have been seeking an outlet in the distributing markets of this country, and a good many of them have gone abroad, largely on consignment. They have no merit but being forced to sale at say 8¢@10¢. It has had a depressing influence on the entire market. It would have been far better for both growers and dealers if this poor trash had never been picked. Brewers are now working mainly on stock bought some time ago; a few deliveries are being made on old contracts, and an occasional new purchase is reported; but there does not appear to be any necessity for important operations in that direction. English markets have quieted down considerably and shipments have fallen off rapidly. But our receipts are now very small, and, notwithstanding the absence of business and present somewhat nominal condition of the market, the situation from a statistical standpoint is not unfavorable.

Hay and Straw.

A strong market for hay continues to be experienced, with a very fair demand, both for shipment and on local account. Offerings were not excessive, especially of desirable qualities of stable hay, which were in most active request. Changes in quotations this week are less marked than for a week or two preceding, but such as are made are all to higher figures. Straw failed to command an advance.

| | |
|--------------------|-------------|
| Wheat..... | 19 00@24 00 |
| Wheat and Oat..... | 17 00@22 00 |
| Oat..... | 17 00@21 00 |
| Barley..... | 17 00@20 00 |
| Clover..... | 12 00@14 00 |
| Stock Hay..... | 10 00@12 00 |
| Alfalfa..... | 10 00@12 00 |
| Compressed..... | 18 00@24 00 |
| Straw, ½ bale..... | 40 @ 50 |

Millstuffs.

Bran was in good request, and, with offerings not particularly heavy, the market was quite firm. Middlings tended against buyers, but demand was not very active. Prices for Rolled Barley were again marked up. Milled Corn was firmly held.

| | |
|---------------------|-------------|
| Bran, ½ ton..... | 17 00@18 00 |
| Middlings..... | 19 00@23 00 |
| Barley, Rolled..... | 25 50@26 50 |
| Cornmeal..... | 23 50@24 00 |
| Cracked Corn..... | 24 50@25 00 |

Seeds.

Market in the main is very quiet, as much due to light supplies of most kinds as to limited demand. Mustard Seed is offering very sparingly and market is firm at the quotations, especially for Trieste. Flaxseed was in moderate receipt, but had been mostly placed prior to arrival. Alfalfa continued in poor request. Most of the present stocks will have to be carried into another season. Business in Bird Seed was within range of previous values.

| | Per cwt. | Per lb. |
|----------------------------|---------------|---------|
| Mustard, Yellow..... | 2 75@3 00 | — @ — |
| Mustard, Trieste Seed..... | 2 90@3 10 | — @ — |
| Mustard, Wild Brown..... | 2 00@2 25 | — @ — |
| Flax..... | 2 10@2 25 | — @ — |
| Canary..... | 2 40@2 50 | — @ — |
| Rape..... | 2 40@2 50 | — @ — |
| Hemp..... | 2 30@2 40 | — @ — |
| Alfalfa, Utah..... | 5 1/2 @ 6 1/4 | — @ — |

Bags and Bagging.

There are no new developments to record in the Grain Bag market. The tone continues weak, with every prospect that the season's supply will prove decidedly heavy as compared with the requirements. Wool Sacks are in liberal stock and market inclines in favor of the buyer, although quotable values show no material change.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, buyer July..... | — @ — |
| Calcutta Grain bags, 22x36, spot..... | 5 1/4 @ 5 1/2 |
| State Prison bags, per 100..... | 5 30 @ — |
| Wool sacks, 4 lb..... | 30 @ — |
| Wool sacks, 3 1/2 lb..... | 27 @ — |
| Gunnies..... | 10 @ — |
| Bean bags..... | 4 1/4 @ 4 1/2 |
| Fruit sacks, cotton..... | 5 1/4 @ 6 1/4 |

Hides, Pelts and Tallow.

No improvement to record in the Hide market, beyond an apparent steadiness at the decline last quoted. Pelts have been arriving rather freely, but so far there have been no reductions in quotations. Tallow brought tolerably steady figures, the demand keeping fairly apace with the supply.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|-------------|
| Heavy Steers, over 56 lbs..... | — @ 10 | — @ 9 |
| Medium Steers, 48 to 56 lbs..... | — @ 9 1/2 | — @ 8 1/2 |
| Light Steers, under 48 lbs..... | — @ 9 | — @ 8 |
| Heavy Cow Hides, over 50 lbs..... | — @ 9 | — @ 8 |
| Light Cow Hides, under 50 lbs..... | — @ 9 | — @ 8 |
| Wet Salted Kip..... | — @ 9 1/2 | — @ 8 1/2 |
| Wet Salted Veal..... | — @ 10 | — @ 9 |
| Wet Salted Calf..... | — @ 10 | — @ 9 |
| Dry Hides..... | — @ 16 1/2 | 13 @ 13 1/4 |
| Dry Kip and Veal, 11 to 16 lbs..... | — @ 16 | — @ 12 |
| Dry Calf, under 4 lbs..... | 18 @ 20 | 16 @ 17 |
| Horse Hides, large..... | 2 25@2 75 | 2 00@2 25 |
| Horse Hides, medium..... | 2 00@2 25 | 2 25@2 50 |
| Horse Hides, small..... | 2 25@2 50 | 2 50@3 00 |
| Colts' Hides..... | 2 25@2 50 | 2 50@3 00 |
| Pelts, long wool, per skin..... | 90 @ 1 15 | 70 @ 90 |
| Pelts, medium, per skin..... | 70 @ 90 | 40 @ 60 |
| Pelts, short wool, per skin..... | 40 @ 60 | 15 @ 30 |
| Pelts, shearing, per skin..... | 25 @ 30 | 25 @ 30 |
| Deer Skins, best summer..... | — @ 10 | — @ 10 |
| Deer Skins, good medium..... | — @ 10 | — @ 10 |
| Deer Skins, thin winter..... | — @ 10 | — @ 10 |
| Elk Hides..... | 10 @ 12 1/2 | 8 @ 10 |
| Tallow, good quality..... | 3 @ 3 1/2 | 2 @ 2 1/2 |
| Tallow, No. 2..... | 2 @ 2 1/2 | 30 @ 37 1/2 |
| Goat Skins, perfect..... | — @ 30 | — @ 20 |
| Goat Skins, damaged..... | 5 @ 10 | — @ 10 |
| Kid Skins..... | — @ 10 | — @ 10 |

Honey.

Stocks of extracted in the local market are very light and market is strong, holders generally asking an advance on quotable rates, and in some instances higher figures are being realized than are below quoted. Comb is not commanding relatively as stiff figures as extracted, but is receiving more attention and values are tending upward.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 5 @ 5 1/4 |
| Extracted, Light Amber..... | 4 1/4 @ 4 1/2 |
| White Comb, 1-lb frames..... | 8 @ 9 1/4 |
| Amber Comb..... | 6 @ 7 |

Beeswax.

The supply is light and is not equal to the demand. Former quotations are in force, but higher prices are being asked and in a small way are being realized.

| | |
|---------------------------|---------|
| Fair to choice, ½ lb..... | 24 @ 27 |
|---------------------------|---------|

Live Stock and Meats.

Beef is commanding stiff prices, which is restricting the demand, but that supplies of desirable stock will prove excessive for months to come is not probable. Mutton sold at about same range as last quoted, with choice in very moderate receipt. Hogs were in fair request and desirable stock brought as a rule full current rates, although prices continue above the parity of levels at Eastern points. Complaint is made of a good many hogs arriving in poor condition, which tend to depress the market; quotations for all hogs show a moderate reduction.

| | |
|---|---------------|
| Beef, 1st quality, dressed, net ½ lb..... | 6 1/4 @ 7 |
| Beef, 2d quality..... | 5 1/4 @ 6 |
| Beef, 3d quality..... | 4 @ 5 |
| Mutton—ewes, 8@8 1/2 c; wethers..... | 8 1/4 @ 9 |
| Hogs, hard grain fed, medium..... | 4 1/4 @ 4 1/2 |
| Hogs, small..... | 3 1/4 @ 3 1/2 |

| | |
|-----------------------------|-----------|
| Hogs, large hard..... | 4 @ 4 1/2 |
| Hogs, soft and feeders..... | 2 1/2 @ 3 |
| Hogs, country dressed..... | 4 @ 5 |
| Veal, small, lb..... | 6 @ 7 1/2 |
| Veal, large, lb..... | 6 1/2 @ 7 |
| Lamb, Yearling, lb..... | 9 @ |
| Lamb, Spring, lb..... | 10 @ |

Poultry.

Market was firm for all choice young poultry, with sales of select in some instances at an advance on extreme quotations. Young stock will likely continue to rule in favor of sellers for the next two or three weeks. Old chickens were in poor request and a clean-up of this class of stock was difficult at low figures. Turkeys were in very limited demand. Hens receiving the decided preference over Gobblers. Old Ducks and Geese in prime condition sold to tolerably fair advantage.

| | |
|------------------------------------|-------------|
| Turkeys, dressed, lb..... | 12 @ 15 |
| Turkeys, live hens, lb..... | 12 1/2 @ 13 |
| Turkeys, live gobblers..... | 10 @ 12 |
| Hens, Cal., doz..... | 3 00 @ 4 00 |
| Roosters, old..... | 3 50 @ |
| Roosters, young, (full-grown)..... | 7 50 @ 8 50 |
| Fryers..... | 6 50 @ 7 00 |
| Broilers, large..... | 5 50 @ 6 50 |
| Broilers, small..... | 3 00 @ 4 50 |
| Ducks, young, doz..... | 7 00 @ 8 00 |
| Ducks, old..... | 4 00 @ 5 00 |
| Geese, pair..... | 1 50 @ 1 75 |
| Goslings, pair..... | 2 25 @ 2 75 |
| Pigeons, Old, doz..... | 1 25 @ |
| Pigeons Young..... | 1 75 @ 2 00 |

Butter.

Owing to a fairly active shipping demand, with a tolerably good inquiry on local account, and arrivals of only moderate proportions, the market has tended in favor of the producer most of the current week. Dairy butter sold to relatively better advantage than creamery, being given the preference, at the lower figures, on shipping and packing orders.

| | |
|-------------------------------------|-------------|
| Creamery extras, lb..... | 19 @ |
| Creamery firsts..... | 18 1/2 @ |
| Creamery seconds..... | 17 1/2 @ 18 |
| Dairy select..... | 17 1/2 @ 18 |
| Dairy seconds..... | 16 @ 17 |
| Dairy, soft and weedy..... | 14 @ |
| Mixed store..... | 14 @ 15 |
| Creamery in tubs..... | 18 @ 20 |
| Pickled roll..... | 1 @ |
| Dairy in tubs..... | 1 @ |
| Firkin, Cal., choice to select..... | 18 @ 19 |
| Firkin, common to fair..... | 15 @ 17 |

Cheese.

Current values are being well sustained, market being firm at the quotations. Spot stocks of all descriptions are light, both of home product and imported, and that there will be any pronounced increase in supplies at an early date is not considered probable.

| | |
|-----------------------------------|-----------|
| California fancy flat, new..... | 9 1/2 @ |
| California, good to choice..... | 9 @ 9 1/2 |
| California, fair to good..... | 8 @ 8 1/2 |
| California Cheddar..... | 9 @ 10 |
| California, "Young Americas"..... | 9 @ 10 |

Eggs.

Prices have been maintained at a little higher range than preceding week, but inquiry was hardly so active. Stocks were not allowed to accumulate, however, to any noteworthy degree. While a few select brands of eggs, arriving direct from henneries, brought an advance on quotations, the firmness of the market was most pronounced on store-gathered stock. The latter continuing to show good quality, and being cheaper than ranch eggs, are just now more actively sought after. Eastern eggs will be again on market in a few days.

| | |
|---|----------|
| California, select, large white and fresh..... | 15 @ |
| California, select, irregular color & size..... | 14 1/2 @ |
| California, good to choice store..... | 13 @ 14 |
| California, common to fair store..... | 12 @ |
| Oregon, prime..... | 12 @ |
| Held Eastern, as to section and grading..... | 12 @ |
| Local Cold storage eggs..... | 12 @ |

Vegetables.

Most kinds of spring vegetables now in season were in increased receipt and sold at easier figures than last quoted. Asparagus, Peas and Rhubarb made the most liberal showing. Winter vegetables, aside from Onions, were in very limited supply. Onions were offered rather freely as compared with the demand, but the bulk of supplies were of only ordinary quality, not very good keepers and not desirable for shipment. Arrivals of Onions are now mainly from Nevada and Oregon.

| | |
|--------------------------------------|-------------|
| Asparagus, No. 1 to choice, box..... | 2 00 @ 2 50 |
| Asparagus, common to fair, box..... | 1 25 @ 1 75 |
| Beans, String, lb..... | 1 @ |
| Beans, Lima, lb..... | 1 @ |
| Beans, Refugee, lb..... | 1 @ |
| Beans, Wax, lb..... | 1 @ |
| Cabbage, choice garden, 100..... | 70 @ 80 |
| Cauliflower, doz..... | 50 @ 60 |
| Corn, Green, sack..... | 1 @ |
| Corn, Alameda, crate..... | 50 @ 1 00 |
| Cucumbers, hot house, doz..... | 50 @ |
| Egg Plant, lb..... | 1 @ |
| Garlic, lb..... | 4 @ 5 |
| Mushrooms, Buttons, lb..... | 1 @ |
| Mushrooms, Wild, lb..... | 1 @ |
| Okra, Dried, lb..... | 12 1/2 @ 15 |
| Onions, Yellow, good to choice..... | 2 00 @ 2 50 |
| Onions, Yellow, cut..... | 1 50 @ 1 75 |
| Peas, Sweet, Garden, lb..... | 2 1/2 @ 3 |
| Peppers, Green Chile, lb..... | 25 @ 30 |
| Rhubarb, box..... | 60 @ 1 10 |
| Squash, Summer, lb..... | 1 @ |
| Tomatoes, box or crate..... | 1 50 @ 2 00 |

Potatoes.

Market ruled steady for most desirable qualities of table potatoes, with no heavy stocks of choice to select. There were very liberal offerings, however, of ordinary qualities and the latter dragged at low figures. Common Sacramento river Burbanks were sold down to 50c per sack, while fancy Salinas were difficult to obtain under \$1.15 per cental. Seed potatoes were in ample supply to accommodate the limited inquiry and prices were without special change. Sweets sold at a wide range, owing to great difference in quality.

| | |
|--------------------------------|-----------|
| Early Rose, River, cental..... | 60 @ 70 |
| Peerless, River..... | 1 @ |
| Reds River..... | 50 @ 60 |
| Garnet Chile, Mission..... | 1 @ |
| Burbanks, Salinas..... | 75 @ 1 15 |

| | |
|--|---------------|
| Burbanks, River, sack..... | 50 @ 65 |
| Burbanks, Petaluma and Tomales, ctn..... | 50 @ 60 |
| Burbanks, Humboldt, ctn..... | 50 @ 65 |
| Burbanks, Oregon, cental..... | 55 @ 90 |
| Garnet Chile, Oregon..... | 1 @ |
| New Potatoes, lb..... | 1 1/2 @ 2 1/2 |
| Sweet River, cental..... | 1 @ |
| Sweet Merced..... | 50 @ 1 00 |

The Fruit Market.

Fresh Fruits.

Apple market is very well stocked for this late date, so far as quantity is concerned, but when it comes to quality the offerings are not all that could be desired. Trade is slow, which is largely in consequence of supplies being mostly of ordinary grades. Common to fair qualities tended decidedly in favor of buyers, and had to depend for custom on a class of consumers who make price a more important consideration than quality. Strictly select, large and sound, four tiers to the box, were too scarce to be quotable in a regular way, and such would doubtless have brought an advance on extreme figure below noted. Strawberries were on market in a little larger quantity than previous week, but were still in exceedingly light receipt. A few from Santa Clara, said to have been grown in hot-house, brought \$1.25 per 1-lb basket. The Monterey section forwarded a small quantity of Strawberries in drawers, six baskets to the drawer, which sold at 25¢/50c per basket, none of them being strictly choice and those going at lower figure being decidedly green.

| | |
|--|-------------|
| Apples, fancy, 4-tier, box..... | 1 25 @ 1 35 |
| Apples, choice, 4-tier, box..... | 75 @ 1 00 |
| Apples, fair to good, 50-lb box..... | 50 @ 75 |
| Apples, common to fair, box..... | 36 @ 50 |
| Strawberries, basket, as to quality..... | 25 @ 1 00 |

Dried Fruits.

Contrary to the monotony which has prevailed in the market for cured and evaporated fruits for some weeks past, a little change has been developed this week. There is a firm market for apricots, and a quotable advance has been established of half a cent to a cent per pound. This advance is the result of the recent damage by frost to the trees in bloom. Stocks of apricots now remaining in the State are reported at forty to fifty carloads, conservative estimates inclining to the lower figure. Peaches are held a little more firmly in consequence of frost damage to coming yield, but values show no pronounced improvement. Stocks of peaches unplaced are stated at from 100 to 125 carloads. Apple market is a little lower for evaporated, but firm for sun-dried sliced and rings. Quartered apples are out of stock and are not quotable. Prune market is as devoid of firmness as last noted and movement is light. Taking the market as a whole, it is extremely quiet, brokers and dealers generally complaining of slow business on Eastern or other outside account. Monday's British Columbia steamer took more than the average quantity of dried fruit, but only 29,413 pounds was for the North, the balance—82,000 pounds—being destined for Minneapolis and St. Paul.

EVAPORATED OR BLEACHED.

| | |
|---|---------------|
| Apricots, Royal, in sacks, per lb..... | 5 @ 6 |
| Apricots, Royal, fancy..... | 7 @ 9 |
| Apricots, Moorpark..... | 7 @ 9 |
| Apples, in boxes..... | 6 1/2 @ 6 3/4 |
| Figs, fancy pressed..... | 4 @ 5 |
| Nectarines, White..... | 4 1/2 @ 5 |
| Nectarines, Red..... | 4 1/2 @ 5 |
| Peaches, unpeeled, choice..... | 3 1/2 @ 4 1/2 |
| Peaches, unpeeled, fancy..... | 5 @ 5 1/2 |
| Peaches, peeled, in boxes..... | 9 @ 12 |
| Pears, unpeeled Bartlett's, halved, fancy..... | 7 @ 9 |
| Pears, halved, unpeeled Bartlett's..... | 4 1/2 @ 6 |
| Pears, quartered, unpeeled Bartlett's..... | 4 @ 5 |
| Pears, peeled and sliced..... | 1 @ |
| Plums, pitted..... | 4 1/2 @ 5 1/2 |
| Prunes, in sacks, 40-50's..... | 4 1/2 @ 5 |
| 50-60's..... | 3 @ 3 1/2 |
| 60-70's..... | 2 1/2 @ 3 1/2 |
| 70-80's..... | 2 1/2 @ 3 1/2 |
| 80-90's..... | 2 @ 2 1/2 |
| 90-100's..... | 1 1/2 @ 2 |
| Above figures are on basis of 2 1/2 @ 2 1/2 for 4 sizes. Prunes in boxes, 1/4c higher for 25-lb boxes, 1/2c higher for 50-lb boxes. | |
| 4 sizes Santa Claras and equal..... | 2 1/2 @ |
| 4 sizes San Joaquin and Northern..... | 2 1/2 @ |
| Prunes, Silver..... | 5 @ 8 |

COMMON SUN-DRIED.

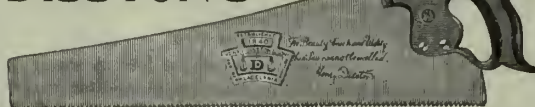
| | |
|-------------------------|-----------|
| Apricots, ordinary..... | 5 @ 6 |
| Apples, sliced..... | 4 1/2 @ 5 |
| Apples, quartered..... | 2 @ |
| Figs, Black..... | 2 @ 3 1/2 |
| Figs, White..... | 3 @ 4 |
| Peaches, unpeeled..... | 3 @ 4 |
| Plums, unsplit..... | 1 @ 1 1/2 |

The dried fruit market on the Atlantic side is reviewed as follows, under recent date, by a New York contemporary, the report coming through by mail:

There has been more interest shown in evaporated apples by exporters this week, and with a fair jobbing demand market has ruled firm with former prices well sustained. Prime and grades just under have the most attention, former selling generally at 8 1/2¢/8 3/4¢, though one or two cars have been cleaned up 1/2c lower and some fruit is held at 8 1/2¢. Choice have a fair jobbing movement at 8 1/2¢/8 3/4¢, rarely higher if of very attractive quality, and fancy to extra fancy, which are very scarce, job from 9¢/10¢ per lb., though the latter figure is extreme, leaving prime prices range down as low as 4¢/5¢ for some very poor old stock. Sun-dried State quarters are in light supply, but with no demand market is nominally weak at 3¢/4¢; southern quarters range from 2 1/2¢/3 1/4¢, though some stock equal to State in quality is held at 4¢. Southern sliced very slow, though fancy are inquired for and would sell at full quotation if here. Practically no southern coarse cut offering. Chops are very dull, but desirable stock is held firmly at 4¢. Cores and skins are weak and lower under increased pressure to sell and liberal offerings. Raspberries have small jobbing sales at 10¢/11¢ for evaporated, but stock is offered from the interior at lower figures, and we hesitate to quote over 10¢, at which some business has been done, though offerings exceed the demand at that figure; sun-dried have had sales at 8¢. Blackberries are having more attention and are held with increased confidence at late prices. Huckleberries job slowly at unchanged figures. Cherries in few hands and generally held above figure quoted. California fruit active and firm, though prices unchanged.

| | |
|--|-----------|
| Apricots, Cal. Moorpark, 1897, per lb..... | 8 @ 11 |
| Apricots, Cal. Royal, 1897, per lb..... | 5 1/2 @ 8 |
| Peaches, Cal., 1897, peeled, per lb..... | 10 @ 16 |

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Sold by Dealers. 113 NEW MONTGOMERY ST., S. F. Send for Samples.

| | |
|--|--------|
| Peaches, Cal., 1897, unpeeled, per lb..... | 5 @ 9 |
| Pears, Cal., 1897, per lb..... | 5 @ 10 |
| Prunes, Cal., 1897, per lb..... | 3 @ 8 |

Raisins.

Nothing new has transpired in the market for Raisins since last issue. Trade is lifeless at present, with values largely nominal and full quotations representing little more than holders' views. While there are probably close to fourteen million pounds Raisins still on hand, it is doubtful if there are to exceed 100 carloads of merchantable stock. The balance, seriously rain-damaged, will likely have to go to handry.

F. O. B. FRESNO DELIVERY.

| | |
|--------------------------------------|---------------|
| Imperial Clusters, per box..... | 1 00 @ 1 10 |
| Dehesa Clusters, per box..... | 1 00 @ 1 10 |
| Fancy Clusters, per box..... | 1 00 @ 1 10 |
| Boxes, London layers, 20-lb box..... | 1 00 @ 1 10 |
| (Usual advance for fractions.) | |
| Loose Muscatel, 4-crown, lb..... | 3 1/2 @ |
| Loose Muscatel, 3-crown..... | 2 1/2 @ 3 |
| Loose Muscatel, 2-crown..... | 1 1/2 @ 1 3/4 |
| Sultanas..... | 3 1/2 @ 3 3/4 |
| Seedless Muscatel..... | 1 1/2 @ 2 |
| Dried Grapes..... | 1 @ 1 1/2 |

Citrus Fruits.

Oranges were in heavy receipt and large quantities were disposed of at auction at lower prices than were ever before recorded in this center. In consequence of the slaughtering above noted, values in the jobbing market were so low and irregular that quotations were difficult to name. Lemons were in liberal supply and cheap, with demand slow. Quotations were reduced. Limes averaged somewhat lower than preceding week.

| | |
|-------------------------------|-------------|
| Oranges—Navel box..... | 1 00 @ 2 25 |
| St. Michaels..... | 1 00 @ 1 50 |
| Seedlings..... | 50 @ 1 00 |
| Lemons—Cal., select, box..... | 1 50 @ 1 75 |
| Cal., good to choice..... | 1 00 @ 1 25 |
| Cal., common to good..... | 50 @ 1 00 |
| Limes—Mexican, box..... | 4 50 @ 5 50 |
| Cal., small box..... | 75 @ 1 25 |

Nuts.

Almond market is strong at the quotations, owing to prospects of there being very little fruit of this variety this season. Some holders are asking an advance on figures quoted. Walnuts of prime choice quality are being steadily held, but there are some stale and rancid offering at low figures, and then fail to attract custom. Peanuts are offering at unchanged rates, with choice only in good request.

| | |
|--------------------------------------|---------------|
| California Almonds, paper shell..... | 8 @ 9 |
| California Almonds, soft shell..... | 6 @ 8 |
| California Almonds, hard shell..... | 4 @ 4 1/2 |
| Walnuts White, paper shell..... | 6 @ 7 |
| Walnuts White, soft shell..... | 6 @ 7 |
| Walnuts White, Cal., standard..... | 4 1/2 @ 5 1/2 |
| Chestnuts, Cal. Italian..... | 8 @ 9 |
| Peanuts, Cal., fair to prime..... | 3 1/2 @ 4 1/2 |
| Peanuts, Eastern hand-picked..... | 5 @ 6 |
| Pine Nuts..... | 7 @ 8 |

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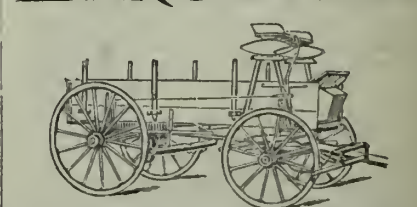
The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 108 Davis St., San Francisco, at 10 o'clock A. M., Wednesday, the 13th day of April, 1898.

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|-----|---------------------|-------|------------|
| 47 | 2 1/2 Hollow Steel. | 2 | 2,500 lbs. |
| 48 | 2 1/2 " " | 3 | 2,500 " |
| 49 | 2 1/2 " " | 2 | 4,000 " |
| 49 | 2 1/2 " " | 2 1/2 | 5,000 " |
| 50 | 2 1/2 " " | 3 | 5,000 " |
| 51 | 3 1/2 " " | 3 | 6,500 " |
| 52 | 3 1/2 " " | 3 | 8,000 " |
| 53 | 3 1/2 " " | 3 | 10,000 " |
| 54 | 3 1/2 " " | 3 | 4,000 " |
| 55 | 3 1/2 " " | 2 | 4,000 " |
| 56 | 3 1/2 " " | 2 1/2 | 5,000 " |

The above are our GREEN LIST Wagons. As we are overstocked on these sizes we can offer bargain prices without regard to our cost.

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Attitude of German Fruit Growers Toward American Competition.

Mr. Edward Sommer of Hamburg, Germany, who assisted Mr. Filcher in the management of the California exhibit last year, writes to the State Board of Trade some very interesting information concerning the favor our products find with German consumers, and the battle German fruit growers are waging against the competition of our superior goods, which threaten to diminish their trade and in many instances may entirely supplant them. Referring to that topic, the letter states: "The German fruit growers are fighting hard to keep the California fruit out of this market. I think that this is due a great deal to the results of your exhibit here last summer. They have seen that California has the nerve to go ahead in the typical American way. This they fear more than the fruit lice. Schutze, an importer of California fruit, has learned that your State is preparing for another exhibit in Europe, to which he is strongly opposed. He says that you encourage too many people to ship, and sell the fruit for anything it will bring, and the growers do not get what they ought to. Jealousy, I think, is the cause of Schutze's opposition."

Sommer continues to relate that he deals in California fruits and wines, which he buys from importers at a considerable advance over the cost of importation, because he has not the means to import in quantities large enough to justify ordering by the cargo or carload, but manages to sell to all the first class hotels and boarding houses, hospitals, and all the best families. He shows them how to prepare the fruit, and they prefer the California article to their home products. "I am glad to know," the letter continues, "that your State is raising money for more exhibit work in Europe, and think that a permanent exhibit in Hamburg or Berlin would be cheaper and result in greater benefits to California growers and dealers. Ten thousand dollars would support such an exhibit for a long time. I shall come to California as soon as I am able, to learn all about your products, and am promised sufficient backing to enable me to import in carloads."

Plan to Pasture California Cattle.

WASHINGTON, March 25.—Secretary of the Interior Bliss will to-morrow be asked to issue a series of emergency leases to cover the season of 1898 for all range territory comprised in the Sierra forest reserve. This vast body of land, where there is always grass, extending, as it does, over an area of nearly two hundred by forty miles, may now be opened to cattlemen who, by reason of quarantine, are denied access to the green ranges of Nevada.

The plan will be proposed by Congressman Castle of the Seventh district, among whose constituents there are some of the largest cattle raisers in the country. The plan to be suggested is for the Commissioner of Public Lands to grant leases to certain portions of the reserve to the cattlemen and sheepmen for summer and fall months. The price to be charged will be so fixed that it will not be a burden to the owners of animals whose ranges given out early, but will be sufficient to pay for a large force of keepers, whose duty it will be to patrol the forests and thus prevent disastrous fires from the negligence or wantonness of the herders. The only reason for the action will be the emergency which the California cattle find facing them.

Senators Perkins and Stewart and J. R. Hebron had a long interview with Secretary of Agriculture Wilson this morning. Dr. Salmon, chief of the Bureau of Animal Industry, was present, and all reports upon which California was quarantined were read and

many affidavits were produced from California veterinarians, showing that Texas fever does not exist in the State.

After much talk Secretary Wilson said he would consent to a movement of cattle from the quarantine district to Nevada if the authorities of that State will permit such action. The cattle to be moved will be inspected in California by a board of experts to be named jointly by Secretary Wilson and the Nevada Board of Health or other proper authorities.

A GOOD CHEAP FARM WAGON.



In order to introduce their low metal wheels with wide tires, the Empire Mfg. Co., Quincy, Ill., have placed upon the market a farmer's handy wagon, sold at the low price of \$19.95. The wagon is only 25 inches high, fitted with 21 and 30-inch wheels, with 4-inch tires. This wagon is made of best material throughout, and fully guaranteed for one year. Catalogue giving full description will be mailed upon application to the manufacturers, who also furnish metal wheels at low prices, made any size and width of tire to fit any axle.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING MARCH 15, 1898.

- 600,606.—TILE ROOFING—J. C. Bayer, Portland, Or.
- 600,635.—QUARTZ MILL—Crain & Forbes, Plymouth, Cal.
- 600,576.—PISTON PACKING—H. Dods, Virginia, Nev.
- 600,579.—GOLD SEPARATOR—Fulcher & Latta, Stockton, Cal.
- 600,723.—ROTARY ENGINE—P. J. Johnson, Los Angeles, Cal.
- 600,832.—LEVEES—Jordan & Duncan, S. F.
- 600,647.—COT BED—H. C. Niteymer, Wheatland, Cal.
- 600,631.—STOVES—W. H. Reiss, S. F.
- 600,623.—HARNESS BUCKLE—G. Shoenberger, Long Beach, Cal.
- 600,756.—SPIRIT LEVEL—A. Volswinkel, S. F.
- 600,815.—NECKTIE HOLDER—D. D. Wadsworth, Escondido, Cal.

NOTE.—Plain and Certified Copies of U.S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

TILE ROOFING.—Joseph C. Bayer, Portland, Or. No. 600,606. Dated March 15, 1898. This invention relates to that class of roofing technically known as "metal Spanish tile." The object of the invention is to provide a thoroughly waterproof roof covering and secure the same to the roof in such a manner as to allow for expansion and contraction. This is effected by a novel construction of the tiles with devices by which two or more sheets of such tiles may be interlocked both vertically and laterally. The roof plate is composed of a single sheet of metal stamped out so as to form a plurality of tiles having an essentially straight and continuous locking seam and engaging tongue upon opposite edges, each of which extends the full length of the whole number of tiles formed in the sheet. The sheet may represent any number of tiles both transversely and longitudinally, there being butts formed across the sheet to represent the overlap and intersection of the tiles longitudinally. In addition to the interlocking edges, a protecting water edge is formed and a nailing strip extends outwardly from the water edge with a flange or tongue which extends from the adjoining sheet so as to fit into the lock.

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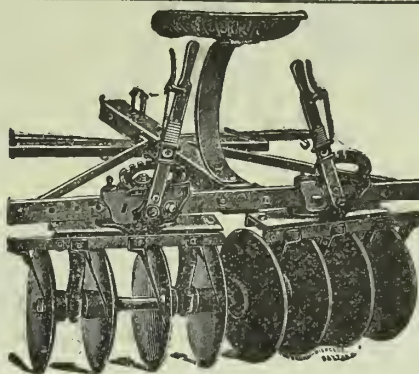
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Professor of Agricultural Practice in the University of California; Author of "California Fruits and How to Grow Them;" President of the California State Floral Society; Horticultural Editor of the "Pacific Rural Press" of San Francisco, etc.

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| XVI. Cabbage Family. | XXXV. Vegetable Sundries. |
| XVII. Carrot, Parsnip, and Salsify. | XXXVI. Vegetables for Canning and Drying. |
| XVIII. Celery. | XXXVII. Seed Growing in California. |
| XIX. Chicory. | XXXVIII. Garden Protection. |
| | XXXIX. Weeds in California. |

COMMENDATIONS BY THE PRESS.

The work will be of inestimable assistance to those who are interested in vegetable growing in California, not only on a large scale, but to the large number who cultivate these products for their own consumption.—*San Francisco Call*.

We take no risk in advising every Californian who has a garden spot to procure a copy.—*San Francisco Chronicle*.

Not only interesting but valuable to every one in this State who cultivates ever so small a lot of ground. The author is eminently qualified for the work which he has just completed.—*San Francisco Bulletin*.

For many years there has been an inquiry for a work on vegetable growing in California, and in this book the demand has been adequately met.—*California Fruit Grower*.

It is certain to be of valuable assistance to the practical farmer.—*Oakland Enquirer*.

It is really almost invaluable, we should judge, to those who desire to be informed upon every essential point connected with vegetable growing in the various soils and climates of this State.—*Sacramento Bee*.

It is an exhaustive exposition of the cultivation of vegetables in this State. There is a fund of information in it which is invaluable and indispensable for the man who would make a success of vegetable growing.—*Alameda Enquirer*.

This treatise will be conceded to be an authority upon the subject of California vegetables. It ought to have a very wide circulation.—*Woodland Democrat*.

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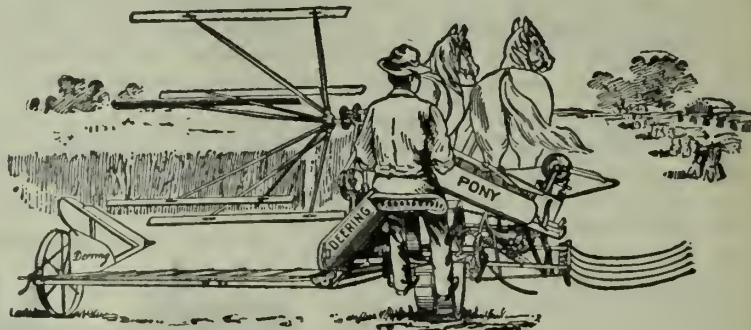
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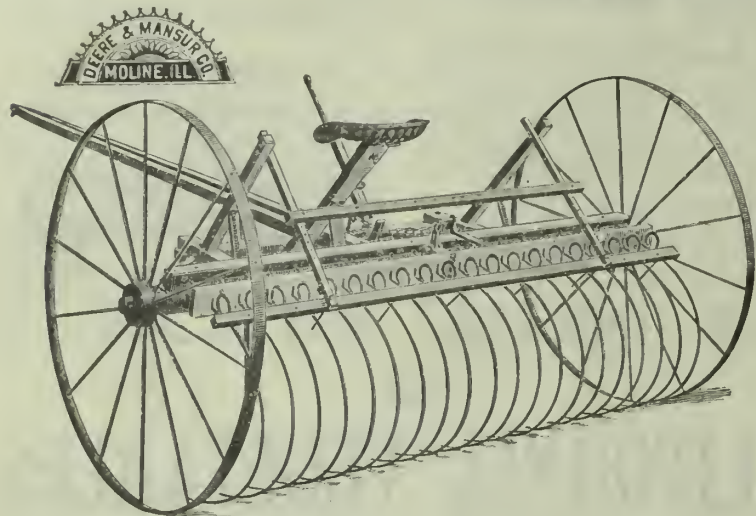


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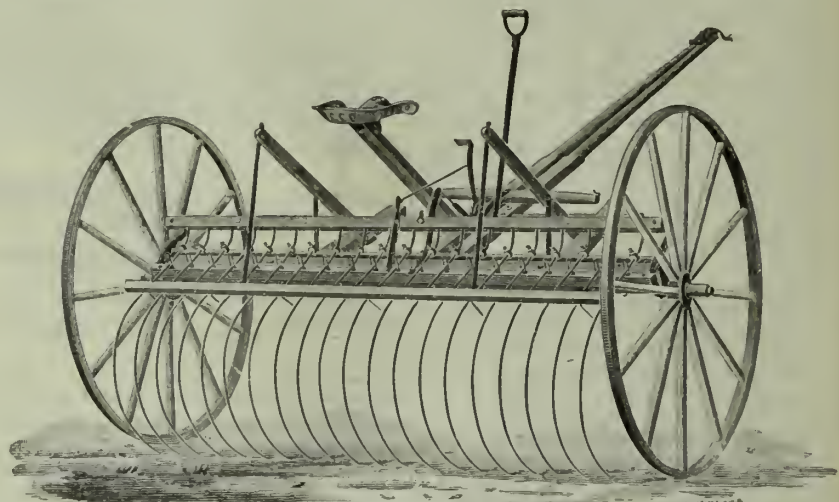


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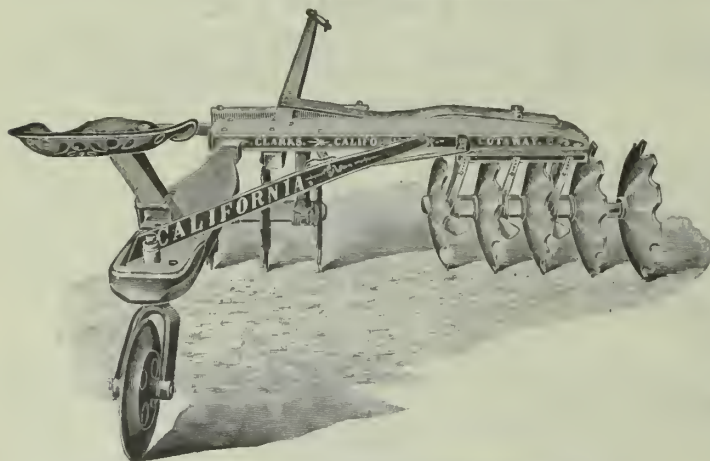
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 15.

SAN FRANCISCO, SATURDAY, APRIL 9, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

Unloading Beets at the Factory.

In our progress with the sugar from the field to the package we draw nearer now to the details of the factory and its wonderful facilities for the most rapid and economical work. The single item of unloading beets and storing them at a minimum cost illustrates the system which characterizes the whole establishment devoted to sugar making. The careless thinker might take it to be of little account how the beets get into the factory so long as they were thrown into the machinery at the right moment, but as a matter of fact they cannot be brought to that point at the right moment and in the right condition unless the most careful and adequate preparations are made. For this reason the large structures and capacious arrangements shown in operation in the engravings on this page are provided.

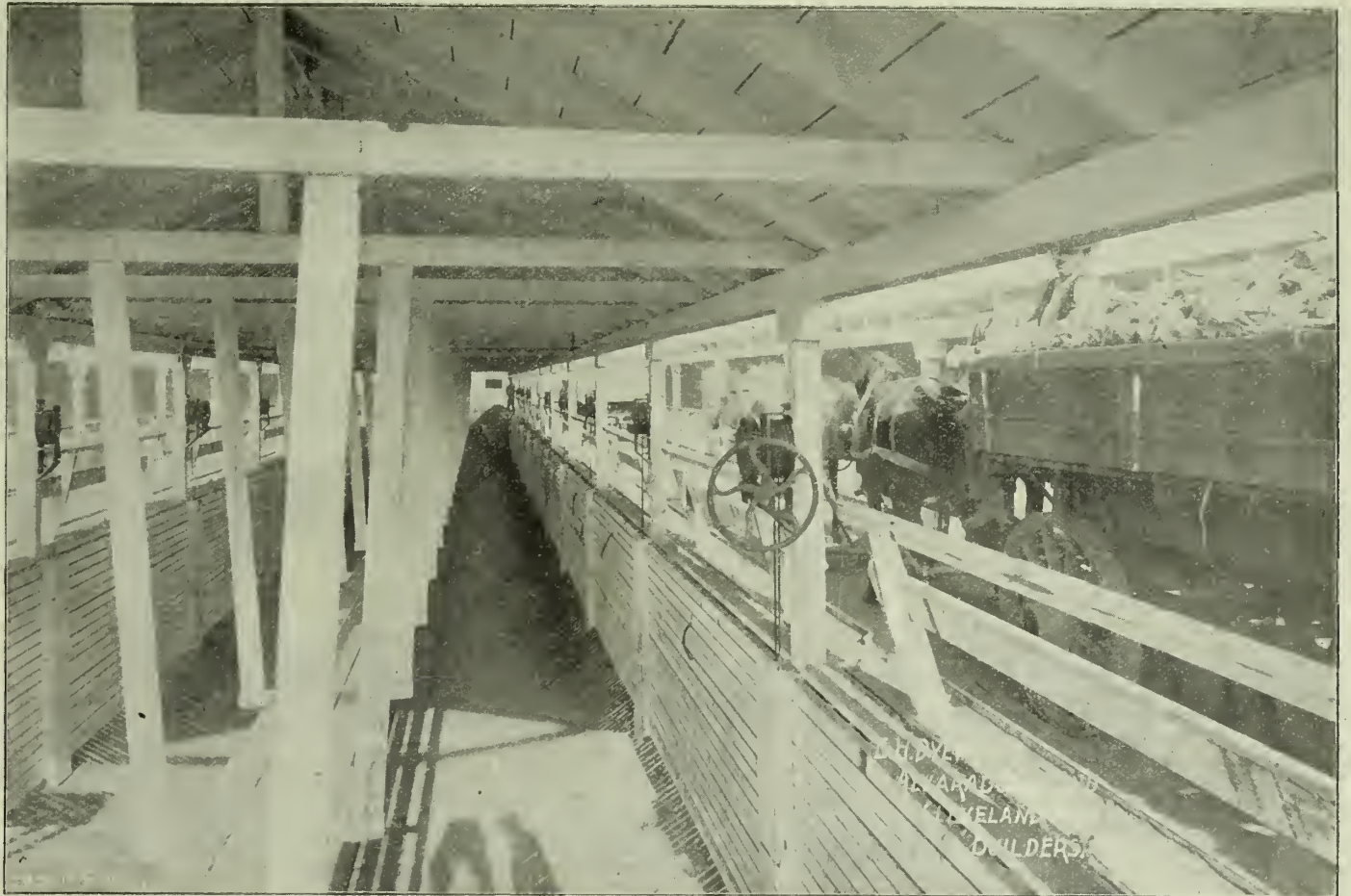
The first picture shows the length of the beet sheds, of which there are several, parallel, with driveways between. The second picture shows how a full wagon load of beets is transferred to the beet bin without handling of the roots whatever. The wagon box used for hauling beets is

specially planned for the purpose. It is strong enough to carry as many as five tons of beets, and the sides hung upon hinges facilitate the quick unloading at the factory, which is accomplished by

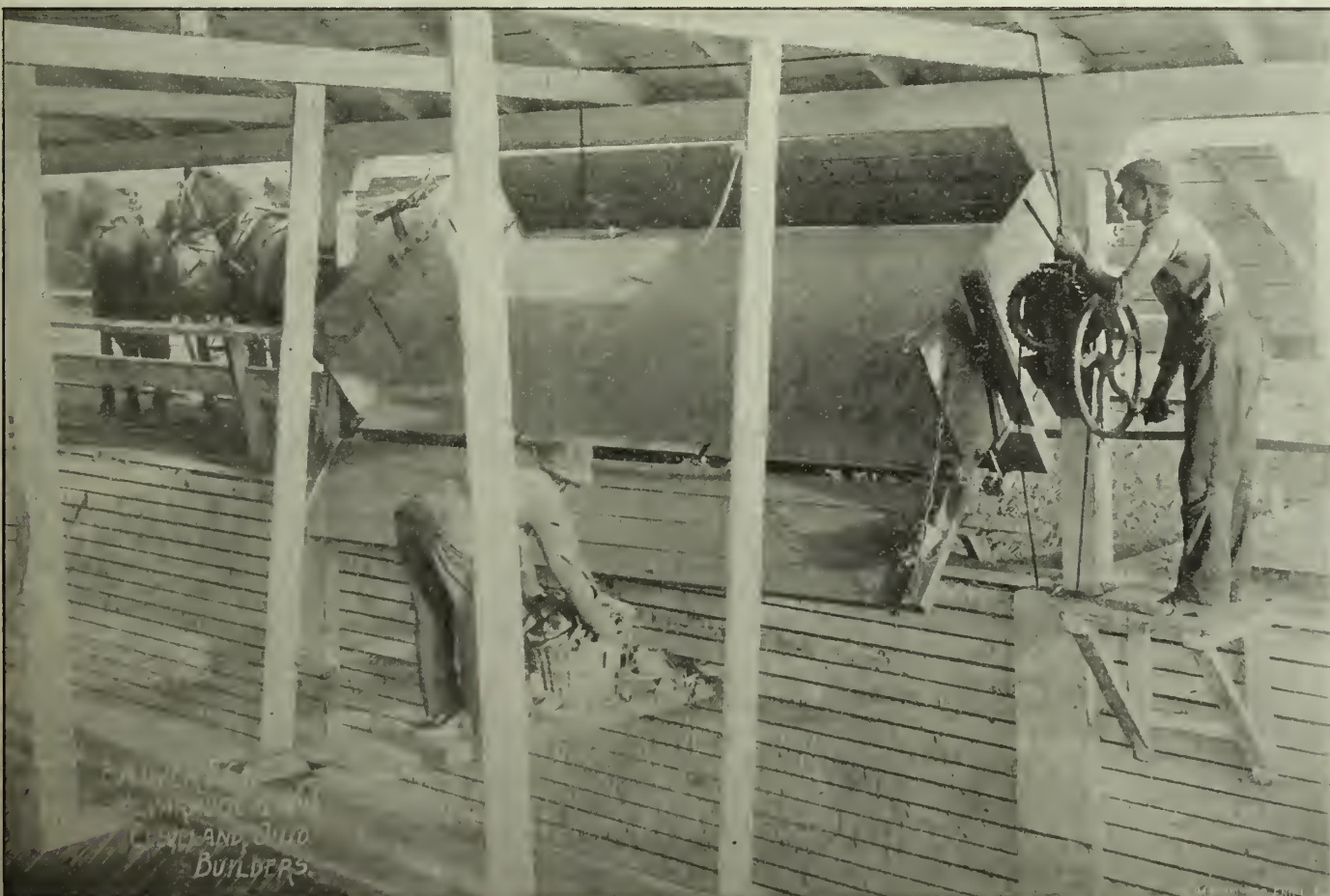
making the platform by the side of the beet pits series of tilting sections, by which means the wagon is tilted by a system of weights and pulleys at such an angle that the beets are in a second dumped into

the pit, the side boards acting as an apron, as is shown in the very apt illustration, which represents the beet bins at the Alamitos factory. The man is seen operating the tilting machinery to restore the wagon to its place. The load of beets has fallen to the bottom of the pit and the other workman is taking from its shelf the basket full of beets which is to be used in sampling the load. This idea of placing a basket to catch a portion of the beets while the load is falling is a keen way of avoiding discussion as to whether the sample fitly represents the load. The beets are thus made to sample themselves, and if the grower has been generous and kind in his cultivation it may be expected that the rich beets will reward him by tumbling their high sugar contents into the basket.

Owing to the breaking of the levee at Shawneetown, Ill., last Sunday, many lives were lost and much property destroyed.



ONE PIT OF THE BEET HOUSE AT ALAMITOS FACTORY—WAGON READY TO UNLOAD.



UNLOADING BY TILTING PLATFORM AND TAKING SAMPLE FOR DETERMINATION OF SUGAR CONTENTS.

PACIFIC RURAL PRESS.

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Registered at S. F. Postoffice as second-class mail matter.

ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, April 9, 1898.

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The Week.

A rain reaching about a quarter of an inch at most points in the Sacramento valley, the lower lands of the San Joaquin and the bay region has brought refreshment and confidence to a considerable area of the State. It is taken as indicating a better "spring feeling" on the part of the weather; and, if indications are true, there will be quite a lightening of the burden in the growth of forage and catch crops in many places where there seemed to be nothing in prospect. Unquestionably, late spring showers can accomplish much good in several ways. The weather review in another column shows that there is a chance of more fruit than was thought possible a week ago. Still there has been very wide frost killing, and those who will have a crop should get good value for it. It ought to be a good selling year.

The following data for the week ending 5 A. M., Wednesday, April 6, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|--|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | 1.74 | 30.27 | 47.66 | 39.31 | 36 | 62 |
| Red Bluff..... | .32 | 12.30 | 23.80 | 22.48 | 41 | 76 |
| Sacramento..... | .28 | 8.23 | 17.15 | 17.93 | 42 | 76 |
| San Francisco..... | .19 | 7.75 | 22.56 | 20.87 | 44 | 60 |
| Fresno..... | .00 | 4.01 | 10.52 | 8.76 | 40 | 82 |
| San Luis Obispo..... | .00 | 6.05 | 20.71 | * | 36 | 78 |
| Los Angeles..... | .00 | 5.26 | 16.74 | 15.71 | 40 | 78 |
| San Diego..... | .00 | 4.10 | 11.64 | 9.68 | 44 | 72 |
| Yuma..... | .00 | 1.65 | 5.35 | 2.96 | 40 | 86 |

* No record.

The Produce Markets.

Wheat is distinctly stronger than last week in the San Francisco market, due in part to the weather but chiefly to the advances (elsewhere fully reported) in the European markets.

Feedstuffs are stiff along the line. Millstuffs are in rather light supply. Hay is quiet but unchanged in price. With reference to this product there is a feeling quite general that dry year prospects have already been fully discounted.

Apricots are stiff and higher owing to the frosts. Peaches are more firmly held with buyers not much disposed to take hold at the higher prices. Other fruits are unchanged.

In the live stock market beef and mutton are a trifle easier, though not appreciably lower. Hogs are lower, packers having for the present gone out of the market.

Butter is firm and it is a curious fact that the dairy grade is selling close up to the creamery, this being due to the current demand for shipping and packing. Eggs are steady. Young poultry is scarce and high.

Hides are quiet and slightly easier. Wool is dragging, owing to the war rumors, so the dealers say,

though just why this should make the situation dull nobody is able to explain.

An interesting incident of the week's business is the despatch of 316 cases of honey by ship to Hamburg, Germany. Honey is strong and "extracted" is in light supply.

Fruit Growers' Convention.

Programme for the Meetings to be Held Next Week at Los Angeles and Riverside.

LOS ANGELES SESSION.

The convention will convene in the assembly hall of the Chamber of Commerce on Monday, April 11th, at 9:30 A. M.

1. Addresses of Welcome—(a) Gen. Chas. Forman, president of the Los Angeles Chamber of Commerce; (b) Hon. Abbot Kinney, president of the Pomological Society. 2. President's annual address, Hon. Ellwood Cooper of Santa Barbara. 3. Address, Hon. Wm. Johnston of Sacramento. 4. Appointment of committees. 5. Motions and resolutions. 6. Discussion. 7. Routine business.

Afternoon Session, 1:30 P. M.—1. The Distribution of Citrus Fruits, A. H. Naftzger, president and general manager Southern California Fruit Exchange. 2. Sulphuring Fruits and Nuts, A. P. Griffiths. 3. Fruit Canneries, Their Advantages, etc.—(a) From a canner's standpoint, M. Welch; (b) From a grower's standpoint, J. W. Deupree. 4. Discussion.

Evening Session, 7:30 P. M.—1. Question Box (questions to be submitted in writing on any subject pertaining to the fruit industry). 2. Olive Culture, B. M. Lelong, Secretary State Board of Horticulture. 3. Deciduous Fruit Exchanges, A. R. Sprague, organizer. 4. The Grape Industry, James Boyd, Riverside. 5. Discussion.

Tuesday, April 12th, 9:30 A. M.—1. Insect Pests, Tree and Plant Diseases, etc.—(a) S. A. Pease, San Bernardino; (b) Hiram Hamilton, Orange; (c) F. Austin, Fall Brook; (d) Geo. Campers, Los Angeles. 2. Ten minute talk from each. 3. Question Box.

Afternoon Session, 1:30 P. M.—1. Fertilizing—(a) Dr. W. B. Wall, Tustin; (b) C. B. Messenger, Pomona. 2. Semi-Tropical Fruits, W. S. Lyons, Los Angeles. 3. Latest Developments in Eradicating Scale Insect Pests, S. M. Woodbridge, Ph. D., Los Angeles.

Evening Session, 7:30 P. M.—1. Reports of Committees. 2. Irrigating Machinery—(a) C. B. Boothe, Los Angeles; (b) S. W. Luitweiler, Los Angeles. 3. How Can We Best Create a Demand for Our Fruits? Col. Philo Hersey, San Jose. 4. Marketing California Products, Mrs. H. W. R. Strong, Los Angeles. 5. Discussion.

RIVERSIDE SESSION.

Programme to be completed. The Convention will convene in Y. M. C. A. Hall.

Thursday, April 14, 9:30 o'clock A. M.—1. Remarks by President, Hon. Ellwood Cooper of Santa Barbara. 2. Addresses of Welcome—(a) Geo. Frost, President Riverside Chamber of Commerce; (b) Hon. E. W. Holmes, Riverside. 3. Response, Hon. R. D. Stephens, Sacramento. 4. Business laid over from Los Angeles session. 5. Motions and Resolutions. 6. Discussion.

Afternoon Session, 1:30 P. M.—1. The Distribution of Citrus Fruits (continuation), A. H. Naftzger, President and General Manager Southern California Fruit Exchange. 2. Varieties of Citrus Fruits to be Encouraged, Wm. C. Fuller, Colton. 3. The Proper Development, Systematic Growing and Marketing of Citrus and Deciduous Fruits. 4. Discussion.

Friday, April 15, 9:30 A. M.—The citizens of Riverside will entertain the visitors in the forenoon, and a drive through the valley.

Afternoon Session, 1:30 P. M.—1. Olive Culture (continuation)—(a) B. M. Lelong; (b) Ellwood Cooper. 2. Discussion. 3. Insect Pests, Tree and Plant Diseases, etc.—(a) A. Craw, State Quarantine Officer, New Pests, Illustrated; (b) Felix G. Havens, Riverside, Beneficial Insects. 4. Discussion. 5. Question Box (questions to be submitted in writing, on any subject pertaining to the fruit industry). 6. Discussion.

This Convention is held under the auspices of the State Board of Horticulture, to enable fruit growers and others interested in horticulture and kindred pursuits to come together for a general interchange of ideas and be profited thereby. All present are requested to take part in the deliberations.

Leghorn Broilers.

TO THE EDITOR:—A beginner in the poultry business said to me the other day: "If you believe everything you can read on poultry you get so confused you can't tell what from which." However, I will try and pen a few lines which are contrary to many writers' sayings, which is that the Leghorns are good enough as layers or to look at, but not an all-round bird, and are not as good eating as some other variety. I want to say that on the 8th of January I had 195 Leghorn chicks hatch in an incubator, and that I have now, March 29th, sold 175 of them in the San Francisco market through a commission man at \$5.50 per dozen net, or a trifle over 45 cents each. What do you suppose that the persons who ate those birds had to pay? If a broiler raiser of any of the larger breeds can do any better than that, I should like to hear their report. I fed those little chicks, and many more that have hatched since, on nothing but wheat in some shape, whole or cracked, or cooked, or some flour made into bread, or bran mash; and I am only a woman, but a lover of poultry.

Madison, Cal.

A Milking Record.

In the excellent article on another page of this issue, on silos and dairying, by M. D. Eshleman of Fresno, there is an error in transcription which should be noted. The statement is made that twenty-nine mature cows averaged 467 pounds per year. The correct figure is 437 pounds per year. It is important that the figure should be accurately stated, although the selection of cows is constantly going on and there is every reason to expect that the higher yield will be attained before long.

Weather and Crops.

SUMMARY OF THE REPORT OF THE U. S. WEATHER SERVICE FOR THE WEEK ENDING APRIL 4, 1898.

General Summary.

The past week failed to bring relief from the unfavorable conditions which have characterized the season. The rainfall was far below the normal in all sections. Rain is badly needed throughout the State. Light showers occurred on the 2nd in the northern portion, but a disappointingly small amount of rain fell, except near the vicinity of Red Bluff. The temperature was more nearly normal than it has been for some weeks previous. The continuance of northerly winds and the absence of rain have caused the ground in portions of the great valleys to become so dry that it cannot be cultivated without irrigating. Reports of the preceding week concerning the great injury done to almonds, apricots and early peaches are confirmed. Grain is already beyond relief in many sections and badly in need of rain in nearly all others. Stock is being moved to the Sierras and northern counties.

SHASTA.—Rain on April 1st will help crops. Prospect of a fair crop of pears and prunes.

SACRAMENTO.—Crops not looking well because of heavy north wind and need of rain. Land that heretofore produced fair crops of hay will not yield pasturage this season.

BITTE.—Cold north winds. Ground too hard to cultivate without irrigating. Peaches and apricots make a better showing than expected.

TEHAMA.—North winds very bad for grain and hay. Some rain which did good, but more badly needed.

GLENN.—Light shower followed by north winds. Prospects very discouraging. Farmers are all idle.

YOLO.—Light rain Saturday morning. Preparing to irrigate orchards. Ground very dry.

SOLANO.—North winds have greatly damaged grain. Unless rain comes soon, crop will be light.

SAN JOAQUIN.—Farmers planting sugar beets on account of failure of wheat. Apricot trees blooming second time now; small crop of apricots; almonds killed.

MERCED.—Grain improving very fast; sandy land with an inch more of rain will insure good crop; heavy land not showing up so well. Warm growing weather.

STANISLAUS.—Outlook poor. Drying up fast. Inside canal limits outlook still cheerful. Elsewhere beyond hope. Late rains benefited grazing on elevated sections. There will be some grapes and late fruit. Shearing finished; fair output of wool.

KERN.—Grain doing well. Usual April rain will make a good crop.

FRESNO.—Continued dry weather and southwest winds have destroyed grain near Fresno. In the foothills considerable grain will mature if more rain. Apricot crop will be almost a total failure; peach crop about one-third to one-half; vines safe thus far. Shearing will last two weeks.

KINGS.—Prospect for grain very poor and frosts have killed most of fruit.

TULARE.—Grain doing well as could be expected. Rain needed; fruit killed.

SONOMA.—Should there be no further damage, a fair fruit crop will be harvested. Pasture drying up light land. Prunes as yet unfurled.

NAPA.—Cold weather has destroyed almonds, apricots, and most of the peaches and prunes. Ground dry and hard from north winds. Grass short and poor. Good grain crop.

ALAMEDA.—Apricots nearly a total failure; other fruits doing nicely. Hay and grain suffering from the dry weather.

LAKE.—Apricots, almonds and nearly all peaches are a total loss. Peas, apples and probably prunes are not damaged. Very little farming being done except on low land. Grapes are beginning to start.

SANTA CRUZ.—Crops and feed in good shape.

SANTA CLARA.—Outlook for fruit more hopeful; prunes more promising. Rain much needed for grain and hay. Orchards will be irrigated. Grain and hay turning yellow in some places. Prunes, apples and cherries in bloom.

MONTGOMERY.—Crops fair considering the weather, but unless rain falls within ten days there is little chance for a crop.

SAN LUIS OBISPO.—Cold, dry north winds; grass in bad shape. Grain will make hay in some sections. Farmers have to ship their cattle to pasturage.

SANTA BARBARA.—Dry, with northwest winds.

LOS ANGELES.—(Bassett).—Dry and windy; crop prospects bad. (Duarte).—Crops need rain badly. (Los Angeles).—Dry, with considerable wind; deciduous fruits looking well; citrus fruits blooming; potato crop will be light. (Palmdale).—In isolated spots fair crop of hay and grain; fruit nearly all killed by frosts. (Pomona).—Dry and frosty nights. (San Fernando).—Cold and windy; grain suffering for rain; oranges, apricots and early peaches doing well.

VENTURA.—High winds drying land. At Ventura moving horses for feed. Good rain would make good crop of barley, if sown on summer-crop land; barley on alkali and stubble lands is beyond hope.

ORANGE.—North winds and cool. Rain badly needed to save small grain.

SAN BERNARDINO.—Grain not growing on account of drouth and cold. Deciduous fruits injured.

RIVERSIDE.—Cold and windy. No further damage to orange bloom but deciduous fruits an entire failure.

SAN DIEGO.—No rain. Wind drying ground. Prospect for hay and grain poor without more rain. The spring is very late and fruit blossoming slow.

LOS ANGELES SUMMARY.—Rain on 25th helped grain, but drying winds following retarded growth. Prospects for grain and hay slim. Some reports state deciduous fruit yet promises a fair crop.

EUREKA SUMMARY.—Cold north winds and frosts have killed some pear, peach and cherry buds, but not enough to prevent an abundant crop. Water in streams very low.

Eucalyptus for Early Bees.

TO THE EDITOR:—Perhaps you will be interested in knowing that I am preparing to plant *E. Polyantha* and *E. Amygdalina Augustifolia* this year. I have procured seeds and placed them in the hands of a first-class propagator, who is raising my seedlings. I will replace the alders along our creek (Silverado, a branch of Santiago creek in Orange county) and also on cleared land, along the roadside, etc. Of course it will be several years before I can tell of my success, but I think they are just what I want to stimulate early breeding in my apiary. The trouble is my bees are not ready when the sage, sumac and coffee-berry come into bloom.

Orange.

C. S. M.

Horticultural Commissioners' Meeting.

The State Association of County Horticultural Commissioners will hold its semi-annual meeting at Los Angeles and Riverside during the coming week of the State Fruit Growers' Convention. The session will begin at Los Angeles on Monday, April 11th, 1898, in the art room of the Chamber of Commerce at 9 A. M. Later in the week meetings will be held at Riverside. All county horticultural commissioners, local inspectors, fruit growers and others interested are invited to be present and take part in the proceedings.

AGRICULTURAL REVIEW.

CALIFORNIA.

Butte.

HEMP INDUSTRY.—Mr. Heaney's hemp crushing plant on the D. T. Biggs place has been running for some time at full capacity, and judging from the quantity of material in the field it will take several months yet to finish the crop. The fiber is pressed into bales of about 300 pounds each and thus shipped East, where it is sold, we are informed, at 6 cents a pound.—Gridley Herald.

Contra Costa.

AN OLD COMPLAINT.—The Colusa *Sun* notes the fact that the farmers of that county buy vegetables from Chinamen that have been imported into the county from Sacramento by express. And yet farmers complain of hard times. The same habit prevails in this county. If we had to depend upon local farmers for fresh green vegetables, such as lettuce, radishes, onions, etc., we would certainly go hungry. A large majority of the farmers would likewise have to go hungry for them, if it were not for the accommodating Chinamen. These vegetables are the simplest and easiest to cultivate, and yet there are but few farmers who grow enough for their own table. When remonstrated with for not growing these simple vegetables they contend that it does not pay. And yet it pays the Chinamen to grow them and to pay expressage on them to get them to market.—Martinez County Paper.

Fresno.

THE Los Angeles Times holds up its lily white hands in holy horror and strongly intimates that the rabbit drives of the San Joaquin valley are quite as brutal as the bull fights of Mexico. But how about the inhuman wretches in southern California who drown gophers and poison rats? Perhaps the *Times* thinks, though, that the farmers should allow themselves to be "eaten out of house and home" rather than resort to cruel or inhuman means of saving their crops. And then, perhaps, it is merely straining a little dreggy language through its hat.—Fresno Republican.

A BOON TO STOCK MEN.—All owners of large herds of cattle and sheep in this part of the State were delighted to learn a few days ago that the Department of the Interior at Washington had given them permission to pasture their stock while traveling over the forest reserves in the Sierra Nevadas, in accordance with the petition forwarded from this county. It is understood that while the permission is for flocks and herds on the move, no limit has been fixed to the time to be consumed in "traveling," and the Government will not object to the stock spending all summer on the reserve. At present there is an unusually large number of sheep in this part of the county, owing to a total failure of crops on the West Side and the drought having destroyed all the alfalfa over there. Even the jack rabbits were forced to flee for their lives, and are more numerous here now than ever before. The sheep are being driven toward the Sierra Nevada mountains as rapidly as possible, where the feed is said to be abundant and very good.—Sanger Herald.

COLD STORAGE AT FRESNO.—A cold storage house capable of carrying 1500 tons, soon to be established at Fresno, will, so the *Republican* declares, be a great advantage to fruit men, especially in view of the coming short season. By it fruit can be kept free from the effects of heat and remain sound until the market demands it. It also enables the grower to warehouse his fruit at home at rates necessarily much lower than prevail in Eastern cities, saves advancing freight charges and leaves the money paid as warehouse charges at home. At the same time it enables him to draw advances on his warehouse receipts and deal directly with the custodians of his goods. Again, it makes him master of the market for the reason that fruit placed in cold storage in the East immediately is rated in the market as "visible supply," which must be sold, and this necessarily hammers down prices, which would not be the case were the goods stored here. It will also enable canneries to place ripe fruit in storage and use it up at their leisure, with no risk of its spoiling. It will also tend to centralize the fruit market here in Fresno, instead of scattering it all over the country, and therefore, whenever the buyer shall be compelled to come to Fresno for his dried and green fruit, the grower will realize much better prices and not be at the mercy of Eastern jobbers.

Lassen.

FRUIT PEST.—Many of the orchardists of this place and the valley are much concerned at the condition of their fruit trees. A pest, said to be the San Jose scale, has infested the orchards and many of our citizens have been compelled to remove valuable trees, so badly have they become affected. The fruit industry of Honey Lake valley is worthy of protection and fostering at this time and some concerted effort should be made toward abating the various pests which threaten, if not checked, to speedily destroy the fruit. If the matter were properly brought to the attention of the Board of Supervisors at its next meeting, which will begin on Monday, April 4th, we think a committee of horticultural commissioners would be appointed whose duty it should be to require every person owning fruit trees to spray them and destroy the pests.—Lassen Mail.

Los Angeles.

CREAMERY EXPERIENCE AT BOLSA.—The creamery is now turning out about 300 pounds of butter per day. The scarcity of feed has caused a decrease in the flow of milk and the creamery is not running up to its full capacity. The price for milk during the month of February was \$1.06 per 100 pounds of milk testing 4 per cent of butter fat, which is considered a fair price. The creamery is an institution of untold benefit to the prosperous little settlement of Bolsa, and one to which the residents should lend a hearty encouragement and support. It is a home institution and gives employment to a number of its home people. The running expenses of the plant are between \$200 and \$300 per month, and the most of this finds its way into the pockets of farmers of the neighborhood; and besides this, it distributes in the community on an average \$1500 per month for milk.—Santa Ana Blade.

Mendocino.

FAVORABLE WINTER FOR SHEEP.—"Not for years have I seen sheep looking so well as they do now," is the way a wool grower in the Yorkville section of Mendocino county puts it. "Sheep are fat," he continued, "and the wool is a much longer staple than ordinary and decidedly free from burrs and dust. The winter so far has been exceedingly favorable and a larger number of lambs will be raised than for several years back. Indeed, I think the wool men have no complaint to offer so far, and I look into the future confidently expecting a good price for wool."

Napa.

GRAIN OUTLOOK.—The *Calistogian* of 1st inst. speaks of the grain outlook as follows: "The grain crops of this county are said to be looking the best they have for many years, yet if a rain does not fall soon they will undoubtedly be short. A little wind would gladly be exchanged for rain just now in almost any quantity."

San Diego.

POULTRY INDUSTRY.—Egg production in the Escondido region is becoming quite an item, as is evidenced by the daily shipments by stage and train to San Diego and Los Angeles. The *Escondido Times* says: "Last Monday morning Mr. Blethen, proprietor of the San Diego-Escondido stage line, hauled out two wagonloads of eggs—in all fifty-five cases.

Each case contained thirty dozen, hence there were 1650 dozen or 19,800 eggs. At 11 cents per dozen, the present market price, these two loads represented a value of \$181.50." Escondido letter.

HAY IS HIGH THIS YEAR.—Hay and grain are scarce, and prices are high. Hay is quoted at \$20 for wheat, \$18 for oat, and \$15 for barley. Twelve hundred tons of hay were shipped from here to San Francisco last year. So much wheat was shipped that the demand stiffened, and much grain is allowed to ripen instead of being cut for hay. This, together with the smaller crop this year, will keep prices up. Santa Maria valley, however, got 10 inches of rain, and will have a good-sized crop. Last year they got \$5 per ton for hay and 50 cents a bushel for wheat. This year they are getting \$15 for hay and 90 cents for wheat.—San Diego letter.

San Bernardino.

THE SOIL IN A BOX OF ORANGES.—With every carload of oranges we are sending out of California 100 pounds of mineral matter, as follows:

| | Pounds. |
|-----------------------|---------|
| Potash..... | 49.94 |
| Soda..... | 2.50 |
| Lime..... | 22.71 |
| Magnesia..... | 5.34 |
| Peroxide of iron..... | .37 |
| Phosphoric acid..... | 12.37 |
| Sulphuric acid..... | 5.25 |
| Silica..... | .65 |
| Chlorine..... | .92 |
| Total..... | 99.98 |

This represents a weight of soil of only about five ounces for each box of oranges. Other elements are always present in the composition of oranges, but in very minute quantities, and the amount named will be more than the weight abstracted from the soil by the ripe fruit. A granite cube of 20 feet would equal the soil elaborated into the 12,000 carloads of oranges shipped from California for this season. This soil could be replaced in weight by the return of twenty carloads. Colton News.

Santa Barbara.

DRY YEAR PHILOSOPHY.—A dry year is here, and there is no use in denying the fact or in trying to fool ourselves. New we should use our endeavors to overcome its effect. The *Times* has faith enough in our people to believe that a way will be found to overcome, in part at least, the ill effects that must follow all insufficient rainfall. Of course money will be close and hard to control, but we anticipate no trouble in the matter of living. The same conditions do not exist here that rule in other lands. Our business is too well distributed to be ruined like the South American republics and India, and countries of that class. California stockmen may suffer when the fruit men thrive and vice versa. The condition to-day is very blue for the stockman, the grain grower and the orchardist alike, but there is yet time for moisture enough to assist the grain grower and the orchardist and then the mines—always the mines to fall back on. We will know nothing about a short rainfall in a hundred years and we should not let it worry us now.—Santa Maria Times.

Santa Clara.

OUTLOOK IN SANTA CLARA.—Sufficient time has elapsed since the visit of the killing frost to this valley to permit of a fairly accurate estimate of the damage. It is generally impossible to obtain anything like reliable information in this regard within a week after the incident. This is because the full effect of a frost is not immediately apparent, or because the people interested do not recognize the symptoms, or because it is natural for them to overestimate or underestimate the damage. This is illustrated by the conflicting reports that are always put in circulation immediately after a cold spell. But now that the orchardists have had time to realize what has happened, pessimists have recovered from their hysteria and optimists have been forced by the facts to accept the situation. The condition of horticultural matters with reference to the frost is about this: Apricots throughout the valley have been generally destroyed; along the foothills they are not greatly injured, and here and there through the valleys there are orchards that will yield good crops. Peaches have been greatly damaged, but not to so great an extent as the apricots; there is every reason to believe that with good rains during this month there will be from 60 to 75 per cent of a full crop of this fruit. Early cherries, such as Black Tartarians, etc., have been severely injured, and not more than half a crop can be figured on, but the later varieties are not much hurt and promise a large yield. A large majority of the prune orchards are untouched by the frost, and so far as can be predicted from the bloom, will yield as good a crop as has ever been produced in the valley. In some localities this fruit has been badly damaged, but the orchards that are hurt cut but small figure when compared with the aggregate. These statements have reference solely to damage done by the frost. There is another, and still more menacing danger, to wit: from the drought. The injury incident to the cold snap is insignificant in proportion to that which would be inflicted by a continued dry season. The damage in the one case would be to the present crop, in the other case it would be to the trees themselves and would involve the crops of a series of years. If we are to have no more rain, it would be better that the frost take all of the fruit of this season, as the efforts of the orchards to mature it would result in such a crippling of the trees that recovery would be doubtful. But there is good reason to hope that the latter contingency will not occur. The history of the valley abounds in instances of heavy rainfall in April, and, in case that experience should be renewed this season, our people will have little cause for complaint. It is said that the damage caused by frost will equal nearly \$100,000; but this amount will be more than made up by the increased price of other fruits in case of sufficient rain. If there should be an insufficient rainfall, those who have lost their fruit by the frost will be the lucky ones, as their trees will go through the dry season with less damage. The situation may be summed up thus: With copious rains during the present month, Santa Clara county will not miss the fruit that has been destroyed by the frost, and there is plenty of reason to hope that the rains will come.—San Jose Mercury, April 2d.

Solano.

SHEEP OWNERS in this end of the county and southwestern Napa are complaining of the great damage being done to their sheep by coyotes. Although there is a bounty of \$10 offered for every coyote killed in these sections, very few of the troublesome animals are being killed. Peter Lynch informs us that he lost several sheep lately and has been obliged to resort to poisoning to save his entire band from extermination. He is sorry that some of his neighbors' dogs have been poisoned, but must try and rid his ranch of coyotes.

ANXIETY RELIEVED.—The frost of Friday night ended our anxiety for the fruit crop. There is now nothing left except the grapes, which were not sufficiently advanced.—Dixon Tribune.

Sonoma.

THE OUTLOOK IN SONOMA.—If we do not get any more rain until after Easter, Sonoma county crops will be injured severely. Where there are no facilities for irrigation, grain and hay crops lack that bright, vivid green look that betokens a healthy growth. In many places crops are not boding their own and pasture is getting short. The return to a normal temperature gives rise to the hope that the damage by frost will be confined to that already done, although many fear frost that may be expected to follow April rains. There are some peaches left, also cherries; the Bartlett pears and prunes are

in even more prodigious bloom, if possible, than last year and have not been seriously injured. Hop growers are hopeful for fair crops and better prices than last year. The acreage in this county will not be increased to any great extent this season.—Santa Rosa Farmer.

Sutter.

FRUIT OUTLOOK.—As the fruit growers make more careful investigation in their orchards, they find that the greater portion of the crop has been killed by the frost. Already some of the largest growers have begun cutting back their peach and apricot trees, so that a new growth will be made this season and thus give the trees a better chance to bear heavier next year. Some of the growers claim that there will not be enough peaches and apricots here to pay the canneries to start up, and that no almonds will be produced at all. This is rather a strong view of the situation, but conservative estimates show that the crop will be very light. Prunes, plums and pears, while injured, will make a fair yield from present calculations. Grapes have been nipped back somewhat, but will start out again. The outlook for a busy season in fruit circles is certainly discouraging for this year.—Sutter Farmer.

Ventura.

THE VENTURA SUGAR FACTORY.—It appears that the dry season will not prevent active development work in beet raising at the big new beet-sugar factory of the Oxnards in Ventura county. In conversation with a reporter of the *Ventura Signal*, Chief Engineer Baur expressed himself as follows: "The best proof of the way we feel about the outlook is evidenced in the work we have already accomplished. It speaks for itself. There it is. Since March 1st we have put up that pile of iron. We will finish it to-morrow. That building is 400 feet in length, as long as two Ventura blocks. It is over 130 feet wide and it will run 50 to 60 feet in height. The machinery for the sugar making is on the way, and it will be here any day and will be coming every day for months. It will be put in as rapidly as it arrives. We will be in time for the farmer and his crop. We will be better than a gold mine to him, for we build for all time. All that we ask is that he does his share. He must not throw up his hands like this, with the choicest climate and soil and most beautiful valley in the world. And right under his feet is water—water in amplitude. It is well known, and I have further demonstrated it. There is a great pent-up reservoir at a depth of 130 to 150 feet under this valley. It is fed from the great Sierra watershed and is kept in here by the ocean. When it is tapped it booms to the surface. A well of three inches bore spouted ten feet. Another I have just finished, ten inches in diameter, with an eight-inch sand pump stuck in its bottom, lifts water six feet above the surface. Within a radius of a few hundred feet I will put down other wells. One of these will be fourteen inches in diameter. I have no fear that the flow from one will diminish the flow of the other. A three-inch well can be sunk for a trifle, comparatively speaking. One hundred dollars will cover the cost, and its flow will irrigate many acres of this fine, moist soil. The farmer will be independent of rains then. The beet will bunt for water a long way down. Why, in Paris I saw a beet whose fine, silky tendrils had gone down twenty-three feet. Six feet below the surface here we could not get rid of the water to lay the cement foundation for the smokestack. The men worked in the water. It was inconvenient, but the foundation will be just as good." Mr. Baur talked at length and in a hopeful strain of the outlook. His whole aim was to impress the farmer with the fact that he should take off his coat and do his best. The sugar company will do its share and aid the beet raiser all in its power.

HARD OUTLOOK FOR BEES.—The apiarists of this county will suffer heavy losses this season, as will stockmen and sheepmen. In an interview, M. H. Mendleson, a prominent beekeeper of the county, reviewed the condition of the industry as it is to-day. He stated that there would be no honey produced in this county this year. But instead of a yield the beemen would be compelled, on account of the dry season, to feed their bees in order to carry them through. He has between 800 and 900 stands. It is his purpose to destroy his weaker stands—about 100—and feed honey to those remaining.—Ventura letter.

Yolo.

A HOPEFUL FARMER.—A *Mail* reporter met John Leathers last evening and asked him the prevailing question: "Are we going to have a dry year?" John laughed and said: "A great many people are in the habit of crying before they are hurt. On the 25th of April, 1888, I was engaged in running a roller over grain that did not look as well as the grain on an average does this year, a month earlier, and we obtained seven sacks to the acre. The cry went up last year that the crop would fall far short of the average, but you know that many farmers had to largely increase their orders for sacks. My father obtained 2640 bags from 180 acres, the heaviest yield in twenty years. This was winter-sown wheat. I have traveled over the country considerably of late, and even up as far as Willows, and I find the grain on an average looking very healthy. Just put me down as prophesying that we will have a good crop, notwithstanding the cry of a 'dry year.'"—Woodland Mail.

AN OPINION ABOUT HAY.—Al Bourn, a Yolo farmer, sold last week at a neat profit some 300 tons of hay, recently bought on speculation from the Fair ranch. Speaking of the transaction to a reporter of the *Woodland Mail*, Mr. Bourn said: "Great opportunities have been offered this year in the hay business, and many men have made big money handling it. The indications of a dry year has had a tendency to advance prices rapidly, and as each day passes and the prospects for rain are no better, the demand for hay has increased until now it is on the verge of a panic. Perhaps I would have done better to hold what hay I had, but I don't think so; it will rain in due time and, in my judgment, there will be plenty of hay in the country next year. Of course it is a chance, but I think I am on the right side."

Yuba.

PASTURE FOR STARVING STOCK.—Over fifty carloads of sheep from Fresno county arrived in Marysville last Tuesday and will be pastured in Yuba county. A large number of sheep and cattle have also been sent to this county from southern California and San Joaquin valley for pasturage, the feed being scarce down there.—Sutter Farmer.

OREGON.

CORVALLIS, OR., March 31.—The chemical department of the Agricultural College Experiment Station has received 500 pounds of seed for distribution among farmers who desire to make experiments in sugar beet culture this season. The seed came direct from Guedelburg, Germany, and is in the original packages, with the revenue stamps and seals unbroken. One hundred pounds of it will be sent to Turner Oliver of La Grande for distribution in that section. The remaining 400 pounds will be sent to any part of the State from the station to all who may apply. The seed is now being put up in packages suitable for shipment. Each package will contain a sufficient quantity of seed to plant one-tenth of an acre. Last season the station distributed 150 pounds of similar seed among the farmers of the State. There was a call for a much larger quantity, but it could not be obtained. Between 500 and 600 plats of beets were grown in various parts of the State from the seed thus furnished, 400 or 500 samples of the beets grown being analyzed at the station laboratory. The results of these analyses established the fact that Oregon is pre-eminently a sugar producing State, particularly the northeastern and southern portions.

HORTICULTURE.

Economy of Labor in the Orchard.

By HENRY TYSON at the University Farmers' Institute at Niles.

Droughth, killing frosts, blighting winds, and fruit prices below bedrock make the necessity imperative for the employment of labor-saving devices and practices. Necessity being the mother of invention, the active and thinking orchardist, in view of the fact of hired labor holding to the same old prices, together with his other calamities, is driven to the extreme of his genius both to originate and adopt methods for abridging labor. Money saved—where there is any place to save—is money earned.

So the question has been propounded to me, Why can't labor be saved by choosing some propitious time in which to prune, whereby the pruning time will lessen or avoid the necessity for the after hand thinning of the fruit?

Thinning with the Shears.—I have for many years had this end in view with the pruning of the peach tree, but never thought it of practical value with any other species of fruit. In so doing I have had two ends in view—the saving to a degree the after thinning of the fruit, and the making sure, nothing else interfering, of having a crop. For instance, I delay the pruning until the blossoming time, or first appearance of bloom. If I have an abundance of blossoms, or promise of bloom, I prune very severely, thereby lessening very much the after pruning of the fruit. On the other hand, if my blossoms are few, I prune sparingly, thus securing to myself a crop. This late pruning is a safe practice with the peach and, I think, one to be highly commended.

I notice of late years there is too great a tendency to severe winter pruning of the peach tree before the grower or pruner can distinguish between fruit or wood buds. In consequence the fruit crop with those who allow this blind practice has been light. In fact, with some this last season was almost a failure. My own peach trees, not far removed from some of these, and which, by the way, I did not prune at all this last summer, were overloaded, much of the fruit having been small, and many of the branches breaking down. I did not strike the happy medium, but they were not left unpruned by intent. I have no regrets, however, as I sold for the same price as those who disposed of their premium fruit and had but little of it.

A question in this connection has also been asked by one of the committee for this occasion, and which question prompted the subject of this paper: Why cannot we postpone the pruning of peach or other trees until after the setting of the fruit, with a view to pruning and thinning at one end at the same time?

To answer this question intelligently and understandingly one needs to have tried the method himself, an experience I have not had. However, upon inquiry of two of my neighbors, who have at the time of the full setting of the fruit of the peach tree tried this practice, they informed me that cutting away the twig or branch entirely resulted in no injury, but that the cutting or heading back, as in pruning, caused a shock to the tree which was apparent for some years afterward. From my own experience in pruning and the knowledge I have acquired of fruit trees, this appeals to my judgment as being about what the result might be. So that, as the method stands with me, after due consideration, it is only applicable in a small way to the peach, and to those species of fruit which bear heavily on their lateral branches or twigs. For instance, with the French prune or tree of like nature one could purposely leave, while winter pruning, many or all of the laterals, with a view to thinning out afterwards should the tree set too thick with fruit. This practice is undoubtedly capable of extension, but, the subject being new, the matter needs further thought and investigation.

Pole Thinning.—The best means I have found, outside of hand thinning, for 'cots is the pole system, an art of science which, I believe, originated with myself. This is nothing more or less than the manipulation of a 10-foot pole in knocking the surplus fruit from the trees. This may seem rather a barbarous practice to some of you, but I have employed it for many years to my entire satisfaction, and at the present price of this orchard product it certainly justifies the means. Of course, it requires judgment, agility and a little practice to become proficient in the art, but to be once acquired is to be never afterward abandoned. By the practice of this method the past season I thinned over twenty-five tons of Blenheim 'cots without a cost to me of one cent for labor. And the product sold at the same price in the market alongside of the more expensive hand-thinned fruit.

In conclusion, I ask your indulgence for possibly a digression. Abridging labor with the shears by combining two operations in one, or employing any other method or appliance for economy or efficiency, will avail us but little, unless some way can be shown or devised whereby the prices of orchard products can be improved. I had hoped, and still hope, that under the present administration of our national government relief would be, and will yet be,

afforded, because the foundation of our trouble as to the commercial value of our fruit products lies beyond the farm itself and our own immediate and individual efforts.

The political economists of our country have some responsibility in this matter, and to them I look for relief; for it is they who, by the proper use and construction of the laws which govern the science of political economy, should foster and protect the productive industries of the country—the industries and the commerce, for that matter, of all our people, of whatever nature and wherever followed or prosecuted. To these efficient financiers of our commonwealth we reach out a despairing hand—the hand of the tiller of the soil; the hand of those who must first receive consideration or all else fail. And so, with hope in my heart, and faith in the moulders of our future, in silence I work, watch and wait.

Effects of Autumn Frosts in the Pacific Northwest.

Although our California growers are deeply occupied at present with measuring the ill-effects of this year's spring frosts they may find time to consider the carefully prepared account of the tree-killing freezes in our upper coast States a year ago last fall. We had in the *RURAL* at that time the current news of the disaster, but there is now available an expert description of the phenomenon and its effects which will interest every one who studies tree growth and influences which affect it. Prof. J. A. Balmer, horticulturist at the experiment station at Pullman, Washington, has just published a bulletin on the subject. He gives careful descriptions of the injuries and makes deductions which are of wide horticultural importance. We shall try to catch the salient points:

The Cold Measured.—On November 26th, 27th and 28th, 1896, there occurred an extraordinary frost which did great damage to the more tender fruit trees over a great part of the Pacific Northwest. Extraordinary, from the fact of its falling so severely so early in the season, and of its coming so suddenly. Up to the evening of November 25th there had been no frost to speak of, 21° Fahrenheit had been the lowest reading at Pullman up to that date. On the night of the 25th the mercury fell to 11°, on the 26th to 2° below zero; on the 27th (Thanksgiving day), to 12° below zero, and on the 28th to 8° below zero. The above would be considered exceedingly low readings for midwinter during our coldest years, but for so severe a frost to fall so early in the season, came as a great surprise to most of the fruit growers of the Northwest.

How the Frost Came.—In the warmer valleys of Walla Walla, Yakima and Snake river, tea roses and geraniums were yet blooming outdoors, the leaves on the fruit trees were yet green and showing little signs of shedding; people were preparing to send flowers from their dooryards to distant friends for their Thanksgiving tables. There had been no frost in the warmer valleys except a little white rind, just enough to remind one that winter was approaching; many orchardists were still irrigating and some few had not yet finished harvesting their winter apples. Coming under such extraordinary conditions no wonder the effects of the frost were disastrous.

The Investigation.—During the summer Prof. Balmer visited, with a view to collecting information on the effects of the freeze, the fruit-growing regions around Walla Walla, also those of Snake river and Yakima; besides making two trips to the west of the Cascade range—also visited and inspected a large number of orchards in the Palouse country.

In making a study of the effects of the freeze one is confronted with several peculiar problems. A variety severely affected and therefore considered tender in one part of an orchard, may have come through almost unharmed in another part of the same orchard. Trees of the same variety planted 25 feet apart under apparently the same conditions—one would be taken, the other left.

In a block of Agen (French prune) some trunks were burst wide open, others left apparently in good order. Certain branches on a tree would be killed stone dead, whilst others seemingly were little damaged and bore this season good crops of fruit.

Northwest Practice.—There are a few things, however, disclosed by an examination of the affected trees and the conditions under which they were growing which point quite conclusively to certain defects in our local orchard practice. Wherever cultivation or irrigation had been kept up late in the season, and the ground was moist and the trees in an active growing condition, there the frost did most damage. On the contrary, wherever trees were somewhat neglected, where weeds had been allowed in considerable numbers, and where the trees had matured their growth and dropped most of their leaves, there the damage was least.

What Water Did.—To illustrate: At Walla Walla, in the extensive orchard of Dr. N. G. Blalock, the water had been allowed on certain parts of the

orchard late in the season, and one ditch had broken from its regular channel and had ponded in certain spots in a block of Italian and Golden Drop prunes; the course of the water could be clearly traced by an irregular line of dead trees and patches of dead trees where the pools of water had occurred, showing clearly the deleterious effects of late irrigation. Another case in point in the same valley is that in the orchard of Mr. U. H. Berney. In Mr. Berney's orchard are long rows of trees, a part of which lie above the ditch and are practically dry, whilst a part lie below the ditch and can be irrigated. That portion of the orchard lying dry was little injured, whilst the same varieties that had received water late in the season were considerably damaged.

Trees on sub-irrigated lands, i. e., lands that are perpetually naturally moist, suffered most severely. In some cases every tree on ten-acre plantations was killed, whilst within a very short distance trees of the same variety and age, whose roots were not in wet land, suffered very little. The damage by the freeze was much greater at Walla Walla than at any other point visited.

Summary.—Prof. Balmer gives very interesting accounts of his observations at different points and concludes with a summary:

1. Don't plant trees on low damp ground, for wherever these conditions were found there the damage was very great, whilst trees of the same age and variety on drier grounds came through uninjured. Trees on damp ground grow later in the season than those on drier ground, consequently the wood is not matured and is more liable to be caught by early frosts.

2. Trees with high exposed trunks, especially those leaning from the afternoon sun, or from the southwest, were greatly damaged in trunk, while in many cases the limbs and young growth were not affected. Head all trees low, allow as little trunk as possible, divide up the sap currents as quickly as possible after leaving the ground. Trees are much harder in limb than in bole. Tall trunks have proven a failure everywhere in eastern Washington, and the results show that the trunk is the most vulnerable part of the tree in a severe freeze.

3. That Agen prune is tenderer than Italian, Golden Drop or Pond.

4. That Napoleon cherry is one of the tenderest varieties grown in the State. It suffered everywhere in the eastern part of the State, except possibly in the Snake river valley.

5. That of the popular varieties of apples Yellow Newton, Esopus, Yellow Bellflower and Fall Pippin proved most tender. The hardest varieties are Ben Davis, Blue Pearmain, Jefferis, Fameuse, Twenty Ounce, Red June, Red Astrachan, Gloria Mundi, Missouri, Yellow Transparent, Limber Twig and Waxen.

6. That seedling peaches proved much harder than budded trees. And that Amsden, Elberta and Foster proved as hardy as any in their class. Alexander proved very tender.

7. That the damage was greatest where the land was lowest, and where the cold air was held in pockets.

8. That in most instances late summer irrigation proved injurious, causing the trees to grow too late in the fall, leaving them in a very tender condition to go into winter quarters.

9. That late cultivation has a similar effect on fruit trees as has late irrigation. It is not safe to cultivate much later than the middle of July.

10. That where orchards were weedy and little cared for the damage by frost was light; this, however, is no plea for weeds, but goes to show that if trees are encouraged to mature their wood energy in the fall, they will be in better condition to endure the rigors of winter.

11. That while I am firmly of the opinion that fall and winter irrigation is absolutely necessary, yet it seems to be a mistake to keep up irrigation or even cultivation during the weeks in the fall when trees naturally mature their wood; better to have a few weeds than to have a lot of immature wood, and late growth. After the leaves are well down and growth has ceased is a good time to apply water; this is nature's way.

[Prof. Balmer's conclusions are of course drawn directly with reference to the Northwest and as precautionary against lower temperatures than Californians have to encounter except in our mountain districts; still many of his points are very suggestive for all climates.—ED.]

Stone Fruits and Coast Influences.

TO THE EDITOR:—During the past week this State has been visited by several severe frosts, and the blossoms of the almond, peach and apricot have been either injured or totally destroyed; at least, such are the telegraphic reports from the different fruit sections.

There has been no complaint, so far, from frost in the strip of county bordering the ocean in Mendocino county, although we have had the same number of frosty nights.

This inclines me to the belief that the immunity is

due to the warming or modifying influence of the Japan current.

I should be pleased to read the opinions of some of the fruit growers of the southern counties, whose orchards are in close proximity to the ocean, on this subject, for it may be proven that the locality which has always been considered as "no place for stone fruit" is just the place for the precarious apricot.

Fish Rock, March 19, 1898.

C. QUEEN.

AGRICULTURAL ENGINEER.

Irrigation and Drainage.

PROF. E. W. HILGARD at the University Farmers' Institute at Fresno.

That irrigation should go hand in hand with drainage is so well understood in old irrigation countries as to amount almost to an axiom.

Drainage in the countries of summer rains is well known to contribute materially to greater security of crops as well as to higher production, due very largely to the better conservation of moisture in drained land. The latter statement at first sight seems paradoxical, since drainage is understood to mean the carrying-off of water. But the facts are too well demonstrated by experience to admit of doubt, and after all are easily explained on common-sense principles.

Effects of Drainage in Humid Regions.—When an underdrain is laid in a close clay soil at three or four feet depth, a marvelous change takes place in the course of a few seasons. While in the natural condition of the land perhaps two-thirds of the rainfall was lost in the "run-off" or surface drainage, and in depressions the water would stand for days, and delay cultivation: it is found that when the same land has been underdrained, from two-thirds to three-fourths of the rainfall penetrates into and moistens the land down to the depth of the drains, which carry off any undesirable surplus very promptly. Instead of the roots penetrating a foot or eighteen inches only, they will invariably go down to the depth of the drains at least, and are thus taken out of reach of injury from drought. Not only are they thus supplied more abundantly with moisture, but also draw for their nutrition upon a much larger amount of soil; for the three or four feet of soil thus rendered accessible to the plant roots are also penetrated by the air, which exerts in the whole of this mass the same fallowing effect that otherwise is restricted to the surface soil. The effective soil mass is thus trebled or quadrupled, and hence crop production becomes not only less subject to failures from drought, but is increased in quantity and improved in quality by a more abundant food supply drawn from the soil.

Such is the effect of underdrainage in the regions of summer rains, where soils as a rule are shallow, and a "raw" subsoil underlies at from 8 to 10 inches depth. In undrained land the turning up of more than half an inch of this subsoil at any one time, with a view to the deepening of the tilled soil, is followed by a serious reduction of crop production during the following season. In drained land, on the contrary, tillage can be extended to the greatest depth to which it can conveniently be made to reach, because the subsoil is aerated and "fallowed." Moreover, tillage not only becomes possible even in clay soils immediately after a rain, but is very much easier, greatly reducing the draft necessary for plowing to the same depth that was used before the soil was drained; or permitting the plowing to a greater depth with the same draft. But, as a matter of fact, a very much smaller amount of tillage will keep the drained soil in good condition; the chisel cultivator can to a considerable extent replace the turning plow.

An Illustration.—How is this improvement brought about by the action of the underdrains? You all know that when cloddy land is rained upon after it has become dry, the clods soon crumble, and on drying again fall to pieces, leaving the field in a fairly loose condition on the surface. Now when such land is underdrained, the same thing happens in consequence of the rapid and frequent changes from wet to dryness, brought about by the rapid draining-off of the water, followed by air. The first year the effect extends only a short distance from the drains sideways. The next season the area affected widens, and so on until the third or fourth year the maximum effect is obtained. If the drains were laid too far apart, even these lines along which water is drawn to the drain, when carried forward will reach the surface, and leave an undrained strip between. The presence of such strips at once becomes apparent from the difference in the thriftiness of the crop growing there; a wheat field will appear as though strips of it had been left unplowed in sowing.

Summary of Drainage Benefits.—The practical effects of drainage may then be summed up as follows: Greater absorption and retention of moisture for crop use; quick relief from surplus water; ability to plow immediately after rains; loosening and deepening

of the soil to the depth of the drains; consequent ready and deep penetration of the roots, and utilization not only of more moisture, but also of a larger supply of plant food. Hence greater security, larger quantity and better quality of crops.

These advantages are especially prominent in the case of heavy clay or adobe lands; but to a greater or less extent they apply to all lands. Let us now consider how drainage works in our arid climate and in our predominantly light or sandy soils.

Drainage of Light Soils in an Arid Climate.—Clearly, where the rainfall is as a rule absorbed into the land as it falls, so that there is practically no run-off, as is the case in most of Stanislaus, Merced and in northern Fresno, a surplus of rain water to be removed by drainage is not to be feared, except (and that is by no means an unusual case) where hardpan underlies. To clay soils, of course, the same rules that hold good in the case of the prairies of Illinois and Indiana, where underdraining has been so extensively and effectively used, will likewise apply with us. But when we irrigate we cannot apply the water with the same uniformity as is done by rains. There will be a surplus for a time at least near the head ditch or furrow, and all surplus water will seek the low ground and accumulate there, raising the water table or bottom water so as to submerge the deeper roots of crops or trees. If this submergence is allowed to continue for any great length of time, such roots will die as far as submerged, and usually become diseased in the upper, unsubmerged portion. Trees and vines so circumstanced will become unprofitable, even if they do not die. And it is clear that so far up as the water remains, and for some distance above its actual level, the soil will be thrown out of use, since air cannot penetrate, and roots will not live without air.

Now, the great depth of our soils happens to be one of the greatest boons conferred on California farmers by nature. With us the difference between soil and subsoil, which must be so seriously considered by the Eastern farmer, is in the majority of cases almost obliterated. Our sands, unlike those of the East, are not merely flint or quartz, but consist of half decomposed rock granules, the surface of each of which abounds in plant food, and thus renders even the sandy wastes of this State abundantly fruitful so soon as irrigated. The prevalent looseness and perviousness of our soils renders the land just as good at several feet depth as it is at the surface, so that, as a matter of fact, the California farmer usually owns from two to four times as many acres of actually available soil as are named in his deed, when compared with the Eastern farmer. He fearlessly grades his land for check irrigation, throwing on top the subsoil from 2 to 3 feet depth, and finds such land produces just as well as that which presents only the natural surface soil.

Rise of Bottom Water.—In other words, our sediment lands possess, naturally, the very advantages which the Eastern farmer must elaborately acquire by underdrainage. *Provided always,* That we do not permit the rise of the bottom water by excessive irrigation to shallow the available soil, and thus deprive ourselves of the use of its deeper layers.

This is what, unfortunately, has to a distressing degree happened in this Fresno region. The first settlers located on the lower ground for greater facility of irrigation. The later comers brought the water to the higher ground in high-lying ditches, through the sandy, pervious banks of which, enormous masses of water have filtered out, filling up the entire country, until the low-lying lands have water within 1 or 2 feet of, in some cases actually at, the surface; killing or rendering unprofitable the old plantations of trees and vines by drowning their roots and depriving them of the greater part of the soil mass in which they originally found their nourishment. Thus it has become necessary, in lands naturally so rich that they would have held out for half a century without fertilization, to resort to the purchase of fertilizers within a fraction of that period. If any one had deprived these farmers of one-half of their acreage *above* ground, lawsuits, if not "shotgun policy," would speedily have been resorted to as a remedy for the wrong. But now that thousands upon thousands of acres have lost one-half or more of their underground soil mass by the rise of the bottom water coming from leaky ditches, there appears to be no remedy at law. The only feasible thing to do, where all have been more or less at fault, is to agree upon a general system of prevention of this injury; either by compelling the tightening of all ditches, so that their leakage shall not trespass upon neighboring lands, or by a general system of deep drainage that shall forever prevent the injurious rise of the bottom water.

I think that ultimately, as the water supply of the San Joaquin valley is found to be barely sufficient to irrigate all its lands by economic use, the former expedient will of necessity be resorted to. Water is too precious in this arid climate to be wasted back into the rivers from which it came, while lands of abundant native fertility are left to remain barren for want of it. So far, then, as drainage would lead to a definite loss of water to the lands, it should not, from a broad point of view, be encouraged. In southern California, where the water supply will barely

go around, the troubles under which you are laboring in Fresno are unknown.

It is clear that a *general* system of drainage alone can relieve the situation. There should not be in law any more question about right-of-way for drainage purposes than there is about the establishment of irrigation ditches. Without such legislation the injured individual is almost powerless, for he cannot legally prove the identity of the water that is drowning out his land, although every man in the State knows exactly where it comes from.

Alkali.—Aside from the injury accruing from water as such, there is frequently superadded another and graver evil, namely the "rise of the alkali" that has come up from the substrata with the bottom water. Regarding the seriousness and extent of this evil I need not enlarge to this audience; for while there still are those who would treat as a public enemy the man who says "alkali" aloud, that tribe has become a small minority; and the intelligent majority, alive to the interest of those who want to stay instead of selling out, are anxious to redeem these fruitful lands from the alkali plague. How to do this I cannot now discuss; it has been abundantly set forth in the publications of the Experiment Station at Berkeley. But what I must insist upon is that without a lowering of the bottom water that has brought the alkali to the surface, effective reclamation is impossible, and the Australian salt bush will have to take the place of alfalfa, vines and fruit trees on a large proportion of these lands. I think this Fresno county is too goodly, and its people too well aware of the good thing they have, or can have, to permit such a change to be made permanent.

Ill Effects of Subsoil Submergence.—But there should not be too much delay of action. The swamping of land gradually but surely brings about changes within the soil, by which the available plant food is made inert, and the agricultural value of the land is permanently impaired. This change will be most rapid and severe on the "red" lands; but even the "white-ash" soils are not exempt from it, and every passing year must be considered as permanently diminishing the productive value of your rich, deep subsoils, so long as they are permitted to remain "swamped."

As to the Depth of Drainage.—Even in the uplands of Santa Clara I have found vine roots at a depth of 20 feet in the subsoil. In our soils and climate, 15 feet is the least depth at which bottom water should be beneath the surface, for the roots feed readily to that depth, and more. You may make it less, but just to that extent you will diminish the soil mass upon which your trees and vines can draw for their food, and just to that extent you will have to invest in the purchase of fertilizers sooner, and more abundantly.

A Word About the Hardpan.—Experience has shown that where good drainage is established and the hardpan is broken by blasting at the time of planting, in most cases it gradually softens, crumbles, and becomes penetrable to the roots. I think therefore that with proper drainage, you will be able to plant an orchard in the hardpan land by blasting where the trees are to go, and later, if you desire to go into grape-growing, you will find the hardpan decayed, so as to be easily penetrated by the vine roots, which have a very insinuating way of getting into even harder rock. Thus it is certain that in every way, the establishment of a rational, general drainage system will be of incalculable benefit to the Fresno region.

THE IRRIGATOR.

Irrigation and Cultivation.

By J. C. SHINN at the University Farmers' Institute at Niles.

The two principal methods of irrigation in use in California are the furrow and block systems, as I shall call them. There have been some experiments in subsoil irrigation by means of various kinds of pipes laid below the reach of the plow, but so far as I know all have been failures. There is also a kind of natural subsoil irrigation practiced on a peculiar quality of land like some near Hanford. There is it possible to irrigate large blocks of land by simply running the water around the piece it is desired to wet, and if the ditch around the piece is kept full of water for a day or several days, according to the circumstances, the land will be thoroughly wet and the moisture will begin to appear at the surface. I was told all this by a real estate agent, but believe it to be substantially correct.

The Furrow System.—To go back to the furrow system, it is the best way to irrigate smooth land with a gentle slope, and on this kind of land no other system should be employed, for this is not only the most economical, but the distribution of water is more even and the land is not caked and packed at all. It is also the best, or rather the only way to water hill slopes. It is wonderful to see what is done in the foothills of the Sierras in the way of irrigation, for the ditches run back and forth and round and round the steep hillsides in some places, keeping nearly

level of course and thus avoiding washing and damage to the land. The same kind of irrigation is used on the rolling lands of Nevada and elsewhere for alfalfa, but the permanent furrows are small and only a foot or so apart.

The only objections that I know of to this system on land that is suited for its use are that one can only use a small head of water on a given piece of ground, and that it is not sure to drown gophers and other pests.

Flooding.—The block or flooding system can be used on irregular ground, if there are not too great depressions, by running ditches throughout on the high parts, the rest of the land being blocked off into rectangular or other shaped plots by running "back furrows," the shape and size of the plots being decided by the lay of the land. The irrigating should begin at the extreme end of a ditch and work back, except in some cases, when it is advisable to water certain high blocks farther back first.

As to the effect of flooding on the land, it is certainly worse than the furrow system; that is, it runs the ground together and packs it more, and it is certainly harder to prevent low parts from getting too much water, so that they are not in condition to cultivate when the rest of the field needs to be worked. In the winter and spring, when more rains are to be expected, this is not so much of an objection, for the land can be allowed to lie until all is dry enough to work, and even if some parts are lumpy there will be rain to soften it so that it can be got in fine condition before summer.

When to Irrigate.—So much of how to irrigate; now comes the question of when to irrigate. I think I learned a valuable lesson from the season of '96-7. In that year we had very heavy and early fall rains and fair or good spring rains up to nearly the end of March, when they stopped off short and I felt some doubt whether trees having heavy crops of fruit would be able to mature it to large size, and also make good growth of wood and fruit-buds for the next year. I was agreeably surprised. The fruit, where well cared for and not injured by extraordinarily hot days at unfortunate times, was the best that we had had for years, and the yield was very heavy. There was a very fine growth of wood and a splendid supply of fruit buds. With field crops there was a generally short yield.

Examination for Underground Moisture.—We have had but about nine inches of rain to date this season, and I was curious to know what was the real state of the soil in various parts of the farm and under various conditions, and give herewith the results of five test holes that I had dug on the 21st of March.

No. 1 was on heavy loam soil, and dry dirt was found at 2 feet.

No. 2 was on the same quality of soil, but had been irrigated in January and was found to be increasingly wet to the depth of 6 feet, where it was so full of water that it was fairly muddy.

No. 3 was on sandy soil that had never been irrigated and was dry at 2 feet.

No. 4 was on the same quality of soil, but had been irrigated in the summer of 1897 and was moist at 4 feet.

No. 5, which was still in the same kind of soil, but had been irrigated in January, 1898, was found to be moist to 6 feet, though not wet like No. 2.

In digging ditches and the like in land that has not been irrigated either this year or last, I found that the rain of this season had not penetrated more than 2 to 3 feet, according to circumstances. I do not mean, of course, that the land below this depth was absolutely dry, but it looked dry to the eye and was, I think, too dry to do surface crops any good, though I think orchard trees could get some benefit from it.

Conclusion on Winter Irrigation.—Now, what conclusions are to be drawn from the facts I have given? The principal one is, I think, that orchards (if on fairly retentive soil) will be insured good growth and crops, barring frost or some other accident, if they can be irrigated in the fall or winter, and they will not suffer from lack of moisture all summer even if the spring rains should be short. It is also demonstrated, I think, that they will do absolutely better with this early wetting than they would with the same amount of water applied later; the heavy and early soaking reaching the utmost roots and being deep in the ground before the hot weather comes is there to stay. Of course, on light soils it would be advisable to make frequent and later applications, using a smaller quantity of water each time.

Cultivation.—Now as to the rest of my subject—Cultivation. It is best to have quite an assortment of tools even for a small place, for the requirements of no two years are the same; but the tools that are absolutely essential are the plow, spader and clod masher or rubber, and with these three implements an orchard can be kept in condition or beet or corn land can be prepared or even grain land may be seeded.

The Harrow.—I suppose, though, the harrow is by far the best for seeding, and indeed a harrow is occasionally very handy on a farm of any kind, but it is a tool that must be used with moderation and wisdom. It is a delusion and a snare in many cases,

and belongs with that class of tools that will work only when the land is quite soft, when almost anything will pulverize it, and the worst that the harrow does is to pack the soil badly if used to excess. Its effect is tremendous in the way of compacting soil, and it is nearly as bad in that way as the heavy rollers that some men are so fond of using. Do not understand me to say that a harrow or roller should never be used. There are rare conditions when the roller is very useful and there is a time nearly every spring when the use of the harrow on soil that is rough and in just the right condition to crumble easily will save a great deal of labor; but if it is used before the end of the rainy season, and there comes a heavy rain on the freshly harrowed land, you all know the effect. [While this is perfectly true from Mr. Shinn's point of view and on the soil which he cultivates, the compacting of the lower layer of the soil and the tearing up of a crusty surface, as is best accomplished by a good harrow, is the most valuable treatment which can be given under certain conditions.—ED.]

The Rubber.—The rubber is a much safer implement to use for all but the very late work I spoke of, and is much more effective in pulverizing lumps and clods, especially if it has knives on the underside, as many made now have, for it will cut to pieces and mash everything if the soil surface is not absolutely dry and the soil heavy; and even where the land has been allowed to get dry before using the rubber, it will break all the clods it can and push the rest into the ground, where they will get moist and soft. The rubber can be safely used after the plow at any time, for if heavy rains come the soil will not pack badly, for the rubber does not pack the soil like a harrow deep down, and the inch or so that it does pack at the surface merely protects the rest. The harrow drags to the surface all weeds and clods, and the latter, if not crushed by another implement, will soon get too hard to be pulverized.

The Spader.—The spader is a wonderfully useful tool and gets rapidly over the land, cutting all clods to the space of the blades and thoroughly loosening and aerating the soil for from 2 to 8 inches deep. It is, I admit, a "horse killer," but what implement is not that handles a big amount of soil in a day. It is possible that some style of subsoil cultivator might be better than the spader for late spring or summer work and would not bring the moist soil to the surface so much, but I have not experimented much with them.

There are various kinds of subsoil plows, cultivators, weed cutters and so on that come in for valuable service under certain circumstances, and which a farmer should have if he can afford them; but, as I said above, he can get along without all but the plow, rubber and spader if he understands his business, and he can do his work economically, too, as a rule.

How Is It Best to Handle Orchard or Other Land?—Some years ago I used to think I had to plow twice, and often did so three times, but now I find that I can get along very well with once plowing for orchard and twice for beets, corn and so on. My present method is to leave the land strictly alone until about March 1st, except for breaking up with the plow all roads, paths and tramped places in the orchard immediately after the first rains. By that time the ground is well covered with weeds of various kinds, and I put on heavy chains, good rolling cutters and have plows that will turn the furrows clear over, and thus cover the weeds completely even if they are feet high, and in this way I get many tons of good manure to the acre each year that do not cost me a cent, and at the same time keep the soil in perfect condition mechanically. After the plow there comes a rubber—not a harrow, for that would drag the weeds up—and the land can lie until the weeds are rotted, when I can run the rubber or harrow or spader across the other way and work and crosswork the land until midsummer. My aim in orchard cultivation is to keep the soil as loose as I can to as great a depth as I can, and if possible I would keep all of the 6 to 10 inches reached by the plow thoroughly stirred until July, for this worked soil in an orchard is merely a mulch and to be effective as such should be kept open.

Plowing Under Weeds.—Before closing it is perhaps advisable to add something further as to the plowing under of weeds in orchards and elsewhere, for the time to do this is important. The weeds grow slowly from the first rains in the fall to, say, about the 1st of March in this section, for the days are short and cool and the sun is low in the sky, but by about the 15th of March they are apt to be growing strongly and drawing heavily on the soil, for they are running up blossom stems or making seeds, according to the kind, and by this time also the days are longer and warmer and evaporation is greater, and you will find that the soil under the weeds, which was up to about the 1st more moist than elsewhere, suddenly in the course of a few days gets drier than bare land. Of course this change in the conditions varies according to the season, but before it comes all the weeds should be turned under, and it pays well to hire extra teams and rush things, and do your plowing, whether you have much or little, during the two or four weeks preceding this drying-out period.

THE DAIRY.

The Silo in Dairying.

By M. D. ESHLEMAN of Fresno at the University Farmers' Institute at Newman.

Dairying, when successfully followed, is the highest form of agricultural pursuit, as it combines an understanding of plants, in growing of the food, and of the science of life in the breeding of the animal, leading the thoughtful mind to the study of the problems of heredity and environment.

When the milk is manufactured into cheese or butter, chemistry and bacteriology lend their aid to making the results perfect. Later the dairyman becomes a merchant, studying the markets, to sell his products at the highest prices. Yet, many people say: "Man's only chance to get a-head in this world is to be born with one."

Financially, dairying comes to take up the mortgages of the wheat, the fruit and the raisin grower of this great valley. In 1880 Freeborn county, Minnesota, had only three unmortgaged farms; chattel mortgages covered nearly everything else owned by the farmers. Dairying began, and to-day they have thirty-four creameries, and last year \$1,000,000 was received for their output. Jefferson county, Wisconsin, another creamery county, manufactures annually \$2,000,000 worth of dairy products.

Successful dairy communities are enlightened, and to-day the books and the papers of the dairymen are in advance of the general agricultural press. The value of the work of the scientific men at the State and Government stations is appreciated and science is regarded as a widening of our knowledge of nature's laws, and that there is wisdom in heeding her teachings and not to blunder blindly along, learning by expensive experience that already known.

The ignorance of the men engaged in dairying on this coast has lowered the standard greatly, for the personal factor must be high. If the men are dirty and rough, without pride in good work, their cows degenerate rapidly into scrubs like themselves. These men are disappearing, for it is natural for those who take much of their spiritual consolation out of the bottle to go to the wall.

Beginning, as we did, at the wrong end by making good butter before we had winter cows, or the feed for them, brought an entirely new set of problems to be solved. We kept a cow boarding house one winter, furnishing good meals and lodging, and many of the cows did not pay for their board.

Balanced Rations.—We found we were not feeding a balanced ration, and that a cow weighing 1000 pounds in the fourth month after calving, while yielding 1.21 pounds of butter fat daily, required 23.57 pounds of dry matter, consisting of 2.06 pounds of digestible protein, 12.5 pounds of digestible carbohydrates and .89 pounds of digestible fat. (Mich. Ag. St.)

Now, how should we reduce the expensive feed bills? We carefully balanced the ration, but it took 20 pounds of grain a day to bring out the milk capacity of the cows. The cows were having attacks of indigestion, owing to the high feeding, and we were buying glauber salts by the hundred weight to cool their feverish systems.

Beets.—A neighbor planted a few acres of beets and offered to deliver them at the barn for \$6 per ton. We found that the cows held up better in their milk and made as much butter on 15 pounds of grain, when fed with 20 pounds of beets, as they had done before on the 20 pounds of grain, and the glauber salts was not needed.

The next summer we grew a few beets, but found our neighbor was correct when he said the cost, owing to the need of careful irrigation and hand hoeing, was too great for profitable work, and as an added expense came the cost of chopping the beets. If we had beet pulp from a sugar factory, the saving effected by having the food cut would be about \$1 a day on the food of 100 cows.

When the warm sun and lengthening days of late winter brought forth again, in due season, the herbs of the field, the milk pails were filled brimming full; butter became plentiful in the valley, and down dropped the market price. This could not be long borne with a contented spirit; yet, how should we keep the cows in those summer conditions of productiveness during the winter? For,

"With a cow that gave such milk,
I'll buy myself a dress of silk.
A balanced ration I will feed,
And get more cows of that breed."

The taking of thought for the morrow led us directly to the building of our first silo.

Construction of Silos.—We have built two silos, both of the modern wooden above-ground type. The first made has been in use three years and is 32 feet by 16 feet, with a height of 24 feet, and is divided into two pits. The construction, without going into measurements, is that of standing a studding on end every 14 inches. The corners are cut off on the inside by using 3-foot pieces laid across them. Inside of the studding the boards are placed horizontally,

then a layer of tarred paper, and then planed boards are nailed on over the tarred paper for a lining, being careful to break the joints. The inside receives a coating of tar and gasoline each year to preserve the wood from the action of the acids developed by the silage. The outside of the studding is also boarded up, making double walls, with 10 inches of air space between them. One of the cut-off corners of each pit of the silo is used as a chute to send down the silage when we are feeding it to the cows. The doors that open into the silo are along these chutes. These doors have to be made to fit exactly, and are covered on the outside with tarred paper, and a second door, also covered with tarred paper, closes on them to prevent any air from entering the silo.

On the roof is a dormer window, through which the end of the elevator from the cutter passes in, as the silo is filled from above.

The corners are cut off and the inside boards are planed, so as to have no sharp corners to fill in, or rough places on the walls to catch and prevent perfect packing of the contents.

The lack of strength in a square silo is an objection to this shape. It can be overcome, if the building shows a tendency to bulge, by either using a few iron bars across the inside or by putting in 6-inch layers of uncut corn every 8 feet when filling in. These long pieces bind the cut mass of fodder and remove the lateral thrust. Very few silos built for wheat, barley, corn or alfalfa can be safely used for beet pulp. If it is deemed desirable to use them for this purpose, the building should be heavily braced with iron.

A Newer Method.—The new silo built last winter is circular, requiring less lumber and giving greater strength per ton capacity than the square form. The rustic on the outside and the inside boards all act as hoops. This silo is 30 feet high and 26 in diameter and holds 318 tons of settled silage. It cost, complete, \$436. An important feature in the preservation of the silo is in providing plenty of ventilation for the double walls by leaving them open at the top, and by boring augur holes at regular intervals between the studding. This building is on a brick foundation, as our land is sub-irrigated. The bottoms of the silos are of earth. Four inches of the surface was removed and coarse creek gravel put in its place to secure a dry foundation, by letting the excess of moisture soak rapidly away.

We had never seen a silo when we built ours, but found the working specifications in Prof. Woll's able treatise on "Silo and Silage." These buildings were put up by a ranch carpenter, assisted by ordinary ranch hands.

Stave Silos.—A new style of silo—promising, because of its cheapness—is made of staves 2 inches thick and from 4 to 6 inches wide and hooped with iron like a water tank. This form is hardly out of the experimental stage in the East, though there freezing of the contents seems to be mostly feared; here we would fear collapsing during the summer. If we build one in this style, we will either staple the staves to an extra top and bottom hoop, or else keep the silo full during the summer time.

Stacks as Silos.—In England the long heavy meadow grasses have been sliced without a building. The newly cut grass was stacked while green and heavy pressure applied by weights arranged after the style of those used on city gas houses. The losses proved too great as the mold penetrated 2 or 3 feet into the unprotected sides.

The building used as a silo costs less than a barn per ton capacity. A silo filled with 180 tons of corn ensilage will contain fifty-four tons of dry matter, while the same number of cubic feet filled with hay will only hold twenty-three tons, carrying 19.20 tons of dry matter.

The most common defect of a silo, aside from lack of strength, is the leaking of air, for, if the bottom and sides are not absolutely air tight, the resulting losses from molding will be heavy, for it is by the heating and expelling of the air upwards through the settled mass and by the heavy mold forming on the top, as soon as the silage cools in the least, that seals and perfectly preserves the fodder in its own juices, as we preserve our canned fruits. The corn on the bits of cobs from the silo tastes exactly the same as the unseasoned canned corn we buy for table use.

Filling the Silo.—The growing crop is cut, hauled and run through the Ross cutter. The elevator carries up the short three-fourth pieces and drops them down into the silo, through the dormer window on the roof.

Several men are kept busy tramping it firm at the walls. This is excellent work for the hobo who drops in at meal time to pay for his dinner, instead of wood chopping, for he cannot put the axe in his pocket and prop the handle up in a conspicuous manner when he takes his departure. As the cut fodder is carried up by the elevator, a small stream of water is kept constantly dropping on the moving mass, for, if the contents of the silo is not sufficiently moist, it dry-molds and does not heat up enough to expel the air. The loss from mold is not serious in a well-made and carefully filled silo. The circular silo, after we were down 8 feet, was solidly good to

the walls. While there is a loss of nutritive value in siloing a crop, it is less than any known way of preserving food in a palatable condition. It will often not exceed 8 per cent, or it may be by carelessness made as high as 20 per cent.

Crops for the Silo.—Oats and peas are grown together for either hay or silage during the spring months. It is useless to plant this crop for winter pasture, as the alfalfa is fit for feeding earlier in the season. The land on which oats and peas are grown is ready in time to plant the Indian corn.

When alfalfa is used as silage, it seems to lose its bloating properties and it also enables us to use profitably the first crop when badly mixed with fox-tail.

The richness of alfalfa hay being in the leaves makes much handling of it result in a serious loss of feeding value, for when it is hauled far or baled many of the leaves are broken off. By siloing it we save all loss. Yet we need alfalfa hay to balance by its superior amount of protein; the carbohydrates of our corn silage and the cows also do better for having eight to twelve pounds of hay with their grain.

Corn is King of the Silage Crops.—How little we appreciate the beauty of this most wonderful of grasses, if it were not constantly before us, we would grow it for its decorative value. Longfellow says:

"A small green feather
From the earth shot slowly upward,
And before the summer ended
Stood the maize in all its beauty,
With its shining robes about it
And its long, soft yellow tresses."

The common way is to pluck the ear and waste all the rest of Nature's bountiful supply of food, stored up in the stalk and leaf of this gigantic grass, yet all parts except the roots are valuable for the cows. The entire plant goes into the silo when at its best, as shown by the ripening ear, and the weighty, bulky corn leaves the farm a finished dairy product. After having been sold to the cows at a fair profit, the butter or cheese is again sold at a profit, and the dairyman becomes a veritable middleman reaping the double profits himself. We make the sowings of corn at brief intervals, so if a breakdown occurs in the machinery only a small portion is put into the silo when too old for best results. When corn is siloed too green the juices may be lost as well as make sour silage. To be right, the corn should have about 70 per cent of water. In planting, it should be given a sufficient distance apart in the hills to properly mature and not grow up weak and watery. Sweet corn makes poor silage, for, like sorghum, it grows too sour. Barley and wheat are siloed; but as we have never used them, we will not speak of them here.

What We Gain.—In looking over the various feeding rations, the amount of grain needed is smaller when silage is part of the feed, for the grain given seems to be better assimilated when the system is kept active and cool by the silage. The hair grows sleek and silky and the calves dropped are stronger and larger.

We find our cows did well and worked cheaper during the past week on the following rations: Coconut cake, two pounds; bran, four pounds; rolled barley, two pounds; alfalfa hay at night and all the silage they would eat in the outside mangers during the day. Our herd has averaged over 300 pounds of butter for the past three years. This includes everything that was milked—heifers, mature cows and culls. We have one string of twenty-nine mature cows that averaged 467 pounds per cow during 1897, five in the bunch making over 500 pounds. We will have many more like these in another year or two, as we have fifty-three heifers that are doing as well as these cows did at their age. This is where the Babcock test of each cow becomes valuable; we know what every cow has produced that we have owned during the past four years.

Silage is an ideal milk food, as ten to twenty-five tons can be readily raised on one acre of land.

At the Ottawa station the average digestible dry matter grown in the form of hay on each acre of land was scarcely 1000 pounds, while the silage fields produced 8000 pounds per acre.

The very bulk makes it important in the ration, for in the forcing of a cow to her highest production we are safe as long as two-thirds of the food is coarse, bulky and yet easy of digestion, for if a large amount of dry, tough, woody matter is present, as in dry cornstalks, the labor and energy expended in working it over takes just that much from the productiveness of the cow.

The silo gives us that great factor in milk production—succulency. The chemist can give us the actual amounts of digestible protein, carbon-hydrates, and fat in the foods used, but only the cow can give us the milk producing value of the water by nature gathered up, subjected to the sunshine and stored within the living tissues of the plant.

We have bought cows that refused to eat bran, or grain, or to drink skim milk, but never one that refused to eat corn silage. They will leave the pasture uneaten and stand lowing to enter the corrals to eat the silage in the mangers.

A few words of caution may not be amiss. Silage should not be fed directly before milking, or it will

impart a sweetish taste to the milk, or should the newly-drawn milk be allowed to stand in a room filled with the odor.

Water plays an important part in milk production. We bought a bunch of fifty-eight cows three weeks ago, and, as they had depended on a man pumping water for them by hand, had suffered for the want of it. We drove them twelve miles to one of our fields. In these strange quarters, in three days, the thirty-eight cows giving milk increased from fifty-one gallons to eighty-three gallons. Certainly the best cow in that bunch was the windmill pump, and a turnip in her throat would have been a serious matter.

How many scrub cows are you supporting? The dairyman that keeps them is certainly a stock gambler, that is short on milk and long on expense; yet a busy man is not to be blamed for not milking cows in the winter when they produce less than a quart of milk apiece. The error is in not having proper food. To-day the cows are where the human family was fifty years ago during the winter time, when they had no canned fruit or vegetables, and oranges and grapes were only for the rich.

Late summer, fall and early winter are the months when butter commands the highest prices, so as your ultimate end is the money that is in it, for, according to A. C. Sage:—

"The sports of childhood's roseate dawn
Have passed our hearts like the dew gems from morn.
We have parted with marbles, we own not a ball,
And are deaf to the hail of a whoop and a call.
But there's an old game that we all keep up,
When we have drunk much deeper from life's mixed cup;
Youth may have vanished and manhood come round,
Yet how busy we are on Tom Tiddler's ground
Looking for gold and silver."

Oregon Dairy Convention.

The annual meeting of the Oregon State Dairy Association was held in Albany last week. The attendance, says the *Rural Spirit*, was small as compared with the importance of the dairy industry of this State. Some very important, interesting and instructive papers were read by practical dairymen, as well as those by the college professors. That the up-to-date dairymen of Oregon are beginning to learn the nutritive value of food for the dairy cow can be plainly seen by attending one of these conventions. More dairymen should join this association, and more interest taken in its meetings, for it is through such organizations the dairymen must expect to fight their battle against adulterated dairy products.

Those in attendance were very earnest in support of a pure food law, and passed the following resolutions:

WHEREAS, The dairy industry in Oregon has been greatly encouraged and benefited by the enforcement of our State dairy and food law, by keeping out of our markets bogus imitations of pure dairy products, be it

Resolved, That the State Dairy Association, now in session in the city of Albany, does most earnestly recommend the continuance of said law; for, should it be repealed, it is our judgment that the bogus imitations would be brought into the markets and would utterly destroy the now profitable dairy business, as well as discourage a prospective enlargement of such important industry.

Professor French read a valuable paper on "Breeds of Cattle for Dairy Purposes." It was an exhaustive resume of heredity as applied to the different breeds of cattle, and abounded in facts and information of much benefit to every one who raises cattle.

The following officers were elected for the ensuing year: President, Thomas Paulsen, Washington county; first vice-president, Strander Froman, Albany; second vice-president, John Kuratlin, Bethany; secretary, F. L. Kent, Corvallis; treasurer, H. T. French, Corvallis.

The Farmer's Life.

Quite apropos to Mrs. Bunting's essay on "Economy on the Farm," there was at the Niles Institute the following song, written for and dedicated to the Institute, sung to the tune of "The Watch on the Rhine" by a male quartette. It was well sung and its jingle well expresses the state of the feelings of the majority of farmers just at present. It is as follows:

A call at early dawn is heard,
Like roaring tide and clashing sword—
"Get up, get up and go to work!
Be quick, get up and go to work!"

CHORUS—

Brave farmers, bold, may joy be thine,
Brave farmers, bold, may joy be thine;
Plant, plow and prune, and irrigate your crops;
Thin, spray and smudge, and paralyze the bugs.

With courage bold the farmer goes
To view his crops he left so fair;
But where they stood, black ruin flows—
Jack Frost has caught them unaware.

And if his fruit escapes the chill,
The codlin moth and scale bug bad
Will levy toll and work him ill,
And take a share of all he had.

But sure, you say, the stuff when sold
By kind commission men will hit
Things right, and line his sack with gold;
He gets red ink accounts and—NIT!

Don't think, kind friends, such things as this
Can ever happen here in Niles.
Here farmers lead a life of bliss,
And every face is wreathed in smiles.

THE HOME CIRCLE.

Make-Believe Town.

Oh, Make-Believe Town is a place of delight
Where wondrous things happen from morning
till night!
You may go there in tatters, when lo and be-
hold!
In an instant you're decked in velvet and
gold!

You take there a broomstick, and, quick as a
flash,
It's transformed to a charger, all fire and
dash!
Or lovely white pony with long, silky mane,
Side-saddle, gilt stirrups and blue-ribbon
rein!

The old rocking chair without arms or a back
Can be changed to a chariot, engine or hack.
The plain wooden floor in five minutes can be
A race-course, a circus, a desert, a sea!

You've only to wish it, when lo, at your feet
Is a fine desert island, rockbound and com-
plete!

You've only to speak—in an instant you can
Be Robinson Crusoe or Friday, his man!

Whatever you wish for, it's waiting for you;
Whatever you dream of, that dream will come
true!

You can be what you will from a king to a
clown,
If once you gain entrance to Make-Believe
Town!

—Claudia Tharin.

At the Last Moment.

There are still people who talk of
Wellington and 1815, but it is now gen-
erally understood that the real battle
of Waterloo takes place every morning
at the station of that name, when the
special trains start for South Africa.
It is a desperate struggle while it
lasts, and the uniformed men have an
exceedingly warm time of it, but they
have always conquered before, and
this encourages and gives them enthu-
siasm. Mr. John Beste—the name
was on the leather label of his single
portmanteau—Mr. John Beste, down
in good time before the real tussle
began, looked on with interest. He
was a tall, reserved looking man, with
a short beard and the brown com-
plexion that comes to men who have
looked at the South African sun.

"One to see me off," said John
Beste. (A short mother was stepping
on tiptoe to kiss a burly youth, and
the sight gave him thoughts.) "Of
course, there is no one to see me off,"
he continued, argumentatively. "Why
should there be?"

Mr. John Beste placed his portman-
teau in the corner of a first-class com-
partment and laughed a little bitterly
at his grumbled soliloquy. A light
touch on his arm made him wheel
around. The sound of a soft voice made
him flush.

"Mr. Beste!"

"Miss Langham! Are you here to
say goodby to me?"

"That was the idea!" said the
young woman, brightly. "I suppose
there are others. How long before
your train goes?"

"About twenty minutes, Miss Lang-
ham."

"Only twenty minutes. I am sorry
that you are going so quickly. And
you will see Mr. Charterhouse, I sup-
pose"—she stepped aside to avoid a
juggernaut trolley of luggage—"as
soon as you arrive?" she resumed.

"I can't possibly avoid that. Is Mrs.
Langham here?"

"My aunt does not know that I have
come down. Did you want to see her,
Mr. Beste?"

"Her presence," he said, gravely,
"is not indispensable to my happi-
ness."

"I'm afraid that you are inclined to
be a little unjust to her. You don't
know her as well as I do, Mr. Beste."

"That is so. But Mrs. Langham
has made a confidant of me during the
time that I've been here, and—well, I
think I understand her."

"I should like to know what you
talked about. It occurred to me at
dinner last night that—"

"Upon my word, Miss Langham, I
have half a mind to tell you."

"Half a mind is plenty, Mr. Beste.
I have a special reason for wanting to

know. My dear aunt has not always
the best tact in the world."

"That," he said, dryly, "occurred
to me."

"Was it of me she was talking, I
wonder? Was I the object?"

"It was of you," he said.

"And my aunt said?"

"Am I bound to answer these ques-
tions, my lord?"

A band of Jewish financial gentle-
men came along the crowded platform,
forming an entourage to some import-
ant individual in their center. With
the enterprise of their race, they
forced the other passengers aside, and
Mr. John Beste and Miss Langham
were separated in the commotion.

"You are bound," said the young
Portia, returning, "to answer all the
questions that are put to you for the
next fifteen minutes."

"Miss Langham," said Mr. John
Beste, shifting his rug from one arm
to the other, and bending a little closer
to the bewildering hat and charming
face that it selfishly attempted to
hide, "Mrs. Langham was extremely
anxious that I should convey certain
information to Mr. Charterhouse. As
manager of Mr. Charterhouse's valu-
able mine, Mrs. Langham seems to
have thought that I should be a valu-
able—what shall I say?—a valuable
fellow conspirator."

"Go on," she said, quickly, and with
great concern.

"I wonder whether you can guess
what I am going to say?"

"I hope I am not guessing rightly.
It is too terrible!"

"Mrs. Langham was good enough
to say that for anything I could say to
my—my master, Mr. Charterhouse,
that would assist the object she had in
view, I should be well repaid. This
was, of course, very generous of your
aunt."

"Go on, Mr. Beste."

The time was flying. Passengers
were settling down in their compart-
ments and at every window was a
bunch of heads. There were tears,
too, because some of those on the plat-
form—parents saying goodby to sons
and wives saying adieu to husbands—
were sufficiently old-fashioned to pos-
sess emotions.

"And what I had to do was this:
Mr. Charterhouse is, as you know, a
bachelor."

"Mr. Charterhouse may be an old
maid, for all I know or care," said she,
hotly.

"And I—I was to use my influence
with Charterhouse—which is, I admit,
considerable—to come over here to—
to see Miss Langham."

"And buy me, I suppose," she ex-
claimed, trembling with excitement,
but not allowing her voice to raise
itself. "To buy me, and sign the
agreement at St. George's, Hanover
Square."

"I think," he said, apologetically,
"that your aunt is very anxious that
you should make a good marriage."

"Those good marriages are all bad
ones," declared Eva Langham, hotly.

"Mr. Beste, you must help me. I can-
not allow my aunt to make me appear
shameful and ridiculous in people's
eyes. You must promise not to say a
word to Mr. Charterhouse about me.
I don't know him and I don't want to
know him."

"He saw you once, I think, when
you were a girl at school."

"I beg of you, Mr. Beste, to do this
for me. I shall marry—when I do
marry—just whom I like, and I will
not consider any one whom I don't
like."

"I am glad to hear you say so."

"I should not dream of saying any-
thing else."

"I thought from what your aunt
said that you understood—"

"Indeed, indeed, Mr. Beste," she
said, pleadingly, "you must not think
so badly of me as all that."

"I can't tell you how glad I am," he
said, honestly, "to hear it. I shall, at
any rate, take away pleasant memories
now."

"Thank you."

"And," he went on, with something
of a hurry in his manner, "I shall
think of you a great deal, Miss Lang-

ham. Now that you have told me this,
I shall look back upon this visit to Eng-
land as one of absolute delight."

"And—and you will come back
again?"

He waited a moment.

"I wonder whether I might write to
you?" he asked.

"I think," she said, looking up with
a pleased expression, "that there is
no law against that."

"I was afraid that you would con-
sider it an impertinence on my part."

"You find that I do not."

"There is something else to explain,"
he said, awkwardly. "I have been
here to some extent in disguise. I
think, perhaps, I had better write and
tell you all about it."

"There are still five minutes," she
said, looking at the tiny gold watch on
her wrist. "Why not tell me now?"

"I suppose," he said, with some
nervousness, "that under no circum-
stances would you marry Mr. Charter-
house?"

"Under no circumstances," replied
Miss Langham, decidedly.

"He is very rich," he remarked,
"and I happen to know that he—"

"I desire," said the young woman,
with much spirit, "I desire not to hear
Mr. Charterhouse's name again."

"Your mind is quite made up?"

"Quite."

A porter stood patiently at the door
of the compartment, holding it open
for the passenger to South Africa.
("There's nothing like a young en-
gaged couple," said the acute porter to
himself, "for making trains late. They
don't care.")

"But suppose I were to tell you," he
said, taking her hand and holding it,
"that Mr. Charterhouse was a poorish
man until three years ago, when this
mine was found on his property, and
has been in England lately? Suppose I
were to tell you that he has fallen in
love with you—"

"Even that does not concern me, Mr.
Beste."

"And supposing I were to tell you
that, to avoid being pestered by finan-
cial people, and to see the little school-
girl who has grown so tall and so—
so charming, preferred to call himself,
not Mr. Charterhouse, the owner of the
West End mine, but Mr. Beste, the
manager of—"

"That," said Miss Langham, her
breath coming quickly, "would make
all the difference."

The porter jerked his head toward
the compartment, to hint to his client
that moments were valuable. The cli-
ent had no need of this intimation, for
he knew better than the porter how
very precious the moments were.

"Do you really mean that?" he
asked, quickly.

"I never say things I don't mean,
Mr. Beste—I mean, Mr. Charterhouse."
She laughed a little nervously. "I

shall always think of you as Mr.
Beste."

"But will you always think of me?
May I come back here in three months'
time and ask you formally—"

"Now, then, sir," said the porter,
"you'll go and lose the special, that's
what you'll do."

"I mustn't do that, my man. Good-
bye, Eva. I must take my seat, I sup-
pose."

He stepped into the compartment,
and the porter, shutting the door, re-
ceived a tip that made him whistle with
delight.

"And you won't give me an answer
now, then?" he went on, anxiously. "I
wish there was time to persuade you,
dear, to say 'Yes.' But I suppose I
must wait until I return, and we must
talk it over then, and I must try to in-
duce you—"

"I think," said Eva Langham, look-
ing up and drawing her grey veil care-
fully up from her lips, "I think that,
considering how badly you have be-
haved, the wisest thing you can do is to
—is to kiss me."

There was just time.

"And that means?" he said, delight-
edly.

"It means," she said, "that I am
very, very happy."

Out you go, special train to South-
ampton. Go slowly for a space, mind,
because there are folk in the train who
are reluctant to leave; go slowly, be-
cause there are hopes and ambitions
among your passengers, and this start
of yours is the first step toward their
realization or their disappointment; go
slowly, because a bearded man, with a
look of content, is straining his sight
to miss nothing of the picture of his
future wife.

"Well," said Eva Langham to her-
self, shyly, "this has been a busy twenty
minutes."

Why do we heap huge mounds of years
Before us and behind,
And scorn the little days that pass
Like angels on the wind,
Each turning round a small, sweet face
As beautiful as near?
Because it is so small a face
We will not see it clear.

We will not clasp it as it flies,
And kiss its lips and brow;
We will not bathe our weary souls
In its delicious now.
And so it turns from us and goes
Away in sad disdain;
Though we would give our lives for it,
It never comes again.

—D. M. Muloch.

It has long been held that typhoid
fever is disseminated by bad water, or
germ-infested milk, and not by direct
contagion. Recently typhoid fever
among soldiers in a small barracks has
been directly traced to dust from the
floor. On examination the disease pro-
ducing bacteria were found in the
sweepings, and the locality of the cots
carried out the conviction.

BREAD, POTATOES and MILK.

A Dyspeptics daily diet.

Dyspepsia is one of the most prevalent of
diseases. Thousands of people suffer from
it in a more or less aggravated form. Few
diseases are more painful to the individual
or more far reaching in their effects on
human life and happiness. What the dys-
peptic needs is not local treatment, not
mere temporary stimulus. The real need
is the tuning up of the entire system. For-
tify the system and it will do its own fight-
ing, and promptly eject any intruding
disease. The success of Dr. Ayer's Sarsa-
parilla in curing indigestion and dyspep-
sia is due to just this quality which it
possesses, of renewing the vital forces,
repairing the waste and loss of the body.
The ordinary treatment brings the food
down to the level of the weak stomach.
Dr. Ayer's Sarsaparilla puts strength into
the stomach, and brings it up to the level
of the strong food fit for men. It does this
by strengthening the entire system. The
stomach cannot stay weak when all the
other organs are gaining strength. What
Dr. Ayer's Sarsaparilla will do for dyspep-
sia is best illustrated in cases like that of
M. S. Shields, Meridian, Miss. Mr. Shields
had got down to the last level of dyspepsia.
But let him tell his own story:—

"For years, I was afflicted with dyspep-
sia which gradually grew worse until I
could eat nothing but bread and potatoes

seasoned with a little salt, and drink only
a little milk. I became so bad that a trifle
too much of even these caused terrible
suffering in the regions of the stomach,
darting pains back of the eyes, attended
with dizziness and partial loss of sight.
The only way I could get relief was by vom-
iting. Finally I had such a severe attack
that the entire left side of my body felt
numb and partially paralyzed, and in this
condition, I was taken to my room uncon-
scious. The physicians failed to help me,
and none of the many remedies I took did
me any good. At last a friend presented
me with a bottle of Dr. Ayer's Sarsaparilla
and before I had used half of it, I could see
a decided change for the better. I used
three bottles and was so completely cured
that for four years I have not been troubled
with the old complaint, but am rugged and
hearty and able to eat anything that can
be eaten. It would be impossible to say
too much in praise of Dr. Ayer's Sarsapa-
rilla, and I would not give one bottle of it
for a dozen of any other kind."—M. S.
SHIELDS, Meridian, Miss.

Try Dr. Ayer's Sarsaparilla if you are
dyspeptic. If you want more testimony to
the value of the medicine, get Dr. Ayer's
Curebook. It is sent free on request by
the J. C. Ayer Co., Lowell.

Fashion Notes.

Trains or trailing street gowns are coming in, in spite of increasing knowledge of germs, and the virtues—or vices—of a long gown as a germ catcher.

Chiffon and mousseline de soie will unquestionably be used for the two seasons before us as the fabrics for the making of many beautiful articles of dress, including entire gowns and fancy waists. Soft, lustrous, becoming and susceptible of most effective manipulation, it would be difficult to find a fitting substitute for these dainty textiles for certain uses.

Marked favor is shown black in gowns, gloves and simple, elegant millinery for Lenten wear.

Black and white checked wool gowns trimmed with black velvet ribbon are to be among the stylish costumes of the season.

Three narrow ruffles of black satin, with satin baby ribbon on the edge, freshen up a black satin skirt wonderfully.

The skirts of the newest evening toilettes are extremely elaborate, many of them showing a very French melange of ruches, flounces and small frills, jetted points of net, lace insertion and accordion plaited muslin, in black, white or colors. Shirred ruffles of Chantilly or other lace or taffeta, or both, set on in clusters of different widths, is a very old fashion revived, and satin ribbon of wide or narrow gauge, set on in rows of five, about 4½ inches apart, usually in waved lines, is another old style that just now is new.

Three deep flounces extending from belt to skirt hem are very popular dress trimmings for light wools and black and other plain taffetas and satins. This gives the economical woman an opportunity to utilize skirts already in her possession for gored foundations, to which she can add triple flounces of new material.

The latest cycling costumes show a preference for black and the dark shades of blue and green, rather than the light fawn and tan shades which have been so much worn.

Yale blue is one of the popular colors in wool gowns for children. They are made with a blouse waist and guimpe neck, or with a blouse front and Eton jacket decorated with braid.

Appliques of black lace on white lisse are one of the features of the new millinery.

The new toques are larger than those of last season, but the difference is most noticeable in the width from side to side.

In some of the latest novelties in neckwear, the high collar, instead of being folded or draped, is drawn up at intervals by cords; two in front, one on each side and two at the back suffice. Different kinds of cravats are adapted to collars of this sort—the double butterfly bow, the regatta, the plas-tron, etc.

A novelty in hairpins is a narrow band of gold 2 or 3 inches long, studded with imitations of real jewels, with a gold hairpin attached. When the pin is in place the band shuts down and confines the stray locks.

Pinked ruches of taffeta silk are used for skirt trimmings.

The latest veil is a scarf two yards long. It is edged with lace, finished on the ends with a flounce, ties in one

knot at the back, and the ends are carried around in front and tied in a bow under the chin.

Bunches of white violets freshen up many a winter hat, giving it a very spring-like look.

A very large number of evening dresses are made with transparent sleeves reaching to the wrist. The bodice proper may have a transparent yoke, or guimpe to correspond, or be cut low, or in three-quarter style, either form being without doubt fashionable; nevertheless, a low bodice with long sleeves in Victorian fashion looks extremely odd, and it is rarely if ever becoming.

Sashes are to lose none of their popularity for months to come, as large invoices of the most beautiful ribbons of medium width are already in the importers' hands. They consist of satin-bordered corded silk patterns, stylish Roman and Persian stripes with deep fringes at the ends, shepherd's check weaves banded with satin in one of the colors of the check, frosted and shot silk sashes plain or woven with tiny flowers; also handsome watered varieties in black, white and colors.

Among the prettiest summer goods for next season will be seen flowered muslins on plain and brocaded grounds, barege muslins, plumetis, grass lawns and plain batistes. Bright colors will be a feature of next summer's dress fabrics.

Shirred silk has partially usurped the place of accordion-plaited silk. It comes in a variety of petty light shades, with knife-plaited frills to match, and is employed for skirt panels, yokes, sleeves and vests.

Gems of Thought.

All that I am my mother made me.—John Quincy Adams.

Good example is the most convincing eloquence in the world.—Selected.

Every man is a quotation from all his ancestors.—Ralph Waldo Emerson.

The man who never in his life was foolish was never a wise man.—Heinrich Heine.

He who finds the most fault is always the one with whom the most fault can be found.—Instructor.

I'm not denyin' that women are foolish. God Almighty made 'em to match the men.—George Eliot.

People seldom love those who withstand their prejudices, and who endeavor to control their passions.

He who wrestles with us strengthens our nerves and sharpens our skill. Our antagonist is our helper.—Burke.

Complain not at difficulties. Neither goodness nor greatness can be attained in this world without them.—Selected.

This is a rushing age; but no man goes by so quick that he can avoid lending a convenient camera an instantaneous impression of himself.

The man who has nothing to boast of but his illustrious ancestry is like a potato—the only good belonging to him is underground.—Sir Thomas Overbury.

He is most my friend who teaches me self-reliance; and self-reliance, in the last analysis, is reliance on those laws and principles which can never be severed from us.—Trinities and Sanctities.

The busy world shoves angrily aside
The man who stands with arms akimbo set
Until occasion tells him what to do;
And he who waits to have his task marked out
Shall die, and leave his errand unfulfilled.
—Lowell.

In the founders of great families, titles or attributes of honor are generally correspondent with the virtues of the person to whom they are applied; but in their descendants they are too often the marks of grandeur rather than of merit. The stamp and denomination still continues, but the intrinsic value is frequently lost.—Addison.

Bank of England notes are numbered backward—that is—from one to ten thousand, hence the figures 00.001.

Curious Facts.

There are 2750 languages and dialects. The game of chess is taught in all the Austrian schools.

There are about six thousand pieces in the modern, high-grade locomotive.

The most extensive cemetery in Europe is that at Rome, in which over 6,000,000 human beings have been interred.

It is computed that there are enough paupers in Great Britain to form, four abreast, a procession over one hundred miles in length.

The highest masts of sailing vessels are from 160 to 180 feet high, and spread from 60,000 to 100,000 square feet of canvas.

A foreign physician asserts that the pain of neuralgia, if superficial, can be relieved by throwing a bright arc light upon the affected part.

One of the simplest and most efficient means of driving away rats is to set saucers of chloride of lime around the places which they frequent. They do not eat the lime, but its fumes are very disagreeable to them and will result in their leaving the neighborhood.

In the forests of Nubia grows a tree from which, when swayed by the wind, come strange sounds like the note of a flute, fife or a whistle. The vocal tree is a terror to the natives. The sounds are caused by the wind blowing through little holes in the trees that have been made by insects.

Human perspiration has been proved to possess toxic qualities, and the poisonous qualities of the exudations are shown to be greatest after vigorous muscular exertion. Guinea pigs and rabbits were killed during the investigations of French scientists by inoculation of perspiration taken from the flannel shirt of a young man in perfect health, who had sweat profusely while dancing. That taken from a glove worn by a young lady heated by the same exertion was equally deadly in M. Aloing's recent experiments.

DOMESTIC ECONOMY.

Hints to Housekeepers.

A tablespoonful of ammonia to a quart of water is about the best medium for cleaning windows, lamp chimneys or any kind of glassware.

In case of fire wet a silk handkerchief and tie without folding over the face. It will prevent suffocation from smoke, permit free breathing and exclude smoke from the lungs.

To wash a glass which has held milk plunge it first into cold water before putting it into warm. The same rule holds good for egg cups or spoons from which eggs have been eaten.

To remove paint stains apply turpentine at once if possible. Turpentine is also good for all kinds of cuts and bruises on the human flesh, but will cause dumb animals intense pain.

All bread crumbs which may be in the bread jar can be utilized to good advantage if dried, rolled fine and placed in a jar or can ready to use in scalloping meats, fish, oysters, vegetables or as thickening.

Silver that has been laid away and thus become badly tarnished can be cleaned quickest if the first application of the whitening is moistened with sweet oil before application. Afterward dry whitening can be used as usual.

At many dinners this winter, iced coffee has been served at the end of the meal, instead of the usual demi-tasse. It is the same as black coffee but is

cooled in a small china freezer packed in ice, to which a little salt has been added.

An experimenting housekeeper finds that the simple blanc manges and jellies which she offers to her family of growing young people are much better liked when served in individual cups. A dozen glass lemonade mugs, to be had anywhere for five cents apiece, make an admirable service, and into these are poured, as they are made, chocolate and corn starch blanc manges, Spanish creams, lemon, orange, coffee and fruit jellies, anything, in fact, that does not need to go into the oven. In the same way, individual cups of cottage pudding have proved more acceptable than when the servings have been cut from the common loaf. The cottage pudding is baked in custard cups and turned out on a platter, upon which, before serving, is laid a folded napkin.

Domestic Hints.

HOME MADE NOODLES FOR SOUP.—Beat up one egg light, add a pinch of salt, one-half gill water; beat well. Sift in as much flour as can be worked in with a spoon, then sift in more flour with hand, stiff enough to roll, but be careful not to use too much. When rolled out, leave it to dry, after which roll it up and shave.

COFFEE TAPIOCA.—Two cups of coffee strained through a cloth, one-half cup of sugar, two tablespoonfuls of tapioca which has been soaked over night; when boiling, stir in one tablespoonful of cornstarch which has been dissolved in a little cold water. Take from stove and turn in a mould or glass dish. To be eaten cold with sugar and cream, flavored with vanilla.

VINEGAR COOKIES.—Cream together one cupful of butter and two cupfuls of sugar; add two tablespoonfuls of vinegar, three eggs well beaten, one-half of a teaspoonful of soda dissolved in one tablespoonful of warm water, and one-quarter of a teaspoonful of salt. Stir in sufficient sifted flour to make a soft dough, roll out on a small floured board, cut into any desired shapes and bake in a moderate oven.

OYSTER PLANT.—Scrape and wash the root, and cut in thin slices. For soup add milk, and season the same as oyster stew. As a vegetable drain off nearly all the water, and add enough milk to nearly cover; add pepper and salt and a good-sized lump of butter, in which has been stirred a tablespoonful of flour. Do not put in enough flour to make the dressing thick, but just enough to render it creamy.

LAMB CHOPS SAUTE WITH PEAS.—Trim the lamb chops neatly and evenly, place in a frying pan with a little butter, season with salt and pepper, and fry to a nice brown; when done arrange on a platter, alternating each chop with a nicely browned piece of toast: strain the water off a can of French peas, put in a pan with a piece of butter, season with salt and pepper, stir until hot, and put in middle of platter.

GRAHAM MUFFINS.—One and one-half cupfuls of coarse graham flour, one teaspoonful of baking powder, one-quarter of a teaspoonful of salt, one egg, one teaspoonful of sugar, one teaspoonful of melted butter, sufficient to make a drop batter. Mix together the flour, salt and sugar. Beat the egg, white and yolk, together, until very light; add one quarter of a cupful of milk and stir into the dry mixture. Add the melted butter and sufficient milk to make a medium thick drop batter, and beat until air bubbles appear over the surface. Stir in the baking powder, pour into well-greased muffin pans, and bake in a hot oven about twenty minutes.

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Yours truly,
S. W. SPENCER.
25 gallon, \$12; 50 gallon, \$17; 100 gallon, \$24.
GRANITE STATE EVAPORATOR CO., 6 Temple Court, N.Y. City



ENTOMOLOGICAL.

The Ladybirds in Southern Alameda County.

By W. BARRY, Horticultural Commissioner, at the Farmers' Institute at Niles.

For many years, as the orchardists in this district are well aware, the struggle to keep the black scale in subjection has been attempted at enormous cost without any apparent benefit. Many different washes were used, one after another, yet the scale seemed to be increasing instead of diminishing.

The bills to be paid for caustics and other washes became so burdensome and the prices of fruit lower each year that we were all in a quandary what to do. All our peaches and apricots were in an unmarketable condition on account of their smutty appearance; peaches could be washed, but the apricots could not be cleaned except by using the knife.

In 1893 I found my peaches and apricots were as smutty as formerly, notwithstanding they were thoroughly sprayed that year. I then came to the conclusion that I would not spray any more, no matter what the result might be, and so I informed all my neighbors, since which time there has been very little spraying done in this locality.

The fact is I accepted the theory advanced at that time that, by spraying, we were destroying the beneficial insects and parasites of the black scale, without improving the situation in the least. Since then I have called the attention of many orchardists to the valuable work done by some of our friendly or beneficial insects. Not only were the deciduous fruit trees infested, but all citrus fruit trees and olives, the foliage and fruit being covered by the smut.

In 1894 the good work done by the Rhizobids appeared in the reports of the State Board of Horticulture, and I made application to them for some colonies for distribution in this district, at the same time I established some breeding places, intending to collect the beetles as soon as they had made the necessary increase.

This was accomplished in 1896, at which time I collected many colonies from the orange grove of Mr. Crowell at Irvington.

The foliage and fruits in our groves and orchards have become cleaner every year, until the present year I was able to make a very creditable exhibit of the fruit and branches of our citrus fruits and olives before the Board of Supervisors from the groves of Messrs. Mayhew, Ellsworth and Shinn of Niles, Messrs. Crowell and Bond of Irvington, Mr. Melver of Mission San Jose and Mr. Chadbourne of Centerville, which was favorably commented upon by the press of Oakland, Alameda and this township.

The cottony cushion scale also made its appearance in 1894-5 in the orange grove of Mr. Crowell at Irvington and in the orange, lemon and acacia trees of Mr. Melver at Mission San Jose, but a few colonies of the "Vedalia Cardinalis" were liberated there and few if any of the pests remain at present, and the results proving satisfactory to all parties.

In 1896 by the permission of Mr. John Rock of the California Nursery Company I placed 150 beetles in their young olive trees and from that colony I distributed over 100 strong colonies in this and Murray townships, also some in Oakland and Haywards the past season, besides establishing breeding colonies in several parts of the township where they can be collected the coming season.

But in recounting the good work

done by the "Rhizobius Ventralis" and the "Vedalia Cardinalis" we must not forget the "Rhizobius Toowoombie," the enemy of the black scale, red scale, San Jose scale and aphids; this beetle has increased beyond all expectations in the orchards around Niles. Last September I received an application for some of these from Mr. Craw for the Department of Agriculture of British Columbia. On September 11th I went into the orchard of Mr. Jones and collected 280 beetles from his peach trees in half an hour while sitting in the buggy. David Tyson told me they were just as plentiful in his orchard.

The following extract from the report of the United States Department of Agriculture will give you an idea of what they think of our exertions in California to introduce these beetles. It says: "In no country in the world has the possibility of control of insects by introducing and fostering their natural enemies been so thoroughly tested as in California; in one instance this experiment saved the State its citrus industry, or the equivalent of many millions of dollars. Continuing it says: "Many fruit growers are discouraged and resume spraying because the scale is not immediately exterminated by the ladybirds, forgetting that at least a year or eighteen months is necessary for the introduction of ladybirds to become numerous enough to be effective, and a year or two more, perhaps, to exterminate the scale. This insect requires favorable conditions of moisture and winter protection and dense foliage to maintain it successfully and considerable care has to be exercised to effect its colonization."

It often happens that colonies of several thousand liberated together will entirely fail, and at other times a few hundred or a much smaller number will take hold and multiply enormously. One great difficulty in the introduction of colonies of ladybirds is the fact that they are preyed upon by little lizards, which are very abundant, and also by birds.

In northern California on deciduous trees the Rhizobius fails to winter well on account of the lack of protection furnished by deciduous trees.

Consequently in distributing the ladybirds I have tried to impress upon every orchardist the necessity of putting something into the crotches of their deciduous fruit trees to protect the beetles during the winter, advice which I hope all have followed.

Discussion.—The above paper was read by Mr. Barry at the late meeting of the Farmers' Institute. Some of the orchardists present complained that although they had colonies of beneficial insects in their orchards, the scale went on increasing. But discussion generally brought out the fact that in these cases of supposed failure the beneficial insects were not the kind required to kill the particular sort of pests in question. Some other growers held that the black scale had been reduced by other agencies and were now increasing again. The growers of the locality are not altogether agreed on the matters involved.

You will get a new notion of what a lamp-chimney can be, when you use a Macbeth; and of what it can do, when you get the right one.

Get the Index.

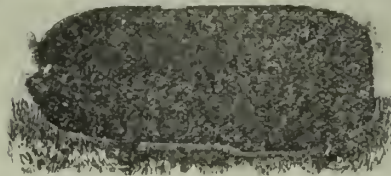
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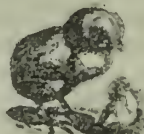
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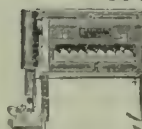
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GOOD HEALTH.

Sanitation in Country Homes.

By MRS. MARY C. ALLEN, of Centerville, at the University Farmers' Institute, at Niles.

In the country sanitation, it is generally supposed, will take care of itself. We are very apt to think country air, country food, including water and country soil, unpolluted; and it should be so. Now there are many things we know well enough, but do not heed, either through carelessness or indifference, until some great sorrow in the form of illness or death—either in our own family or of our neighbors—awakens us from our apathy.

Water Supply.—The freedom of well water from harmful bacteria depends upon the efficiency of natural filtration, freedom from stagnation and from contamination from the sides and tops of the wells. The proximity of sources of pollution, such as barnyards, hogyards, cesspools and vaults, counts for little as to a distance of feet. The position should be studied in regard to the slope of the strata, and the ground-water currents. These mean much more in laying bare a source of infection. The cause found, the remedy is obvious.

Care of Wastes.—The waste of our daily lives constitute one of the greatest sources of danger to health of country districts. The vaults of outhouses and cesspools from closets are a constant menace, either to pure water supply or the air we breathe; too often to both. For the disposal of the human excreta nothing has been found to be in country districts at once so simple and so sanitary as the dry earth closet. There are different forms of them made by manufacturers; but a design contributed by Charles Wingate, sanitary engineer, New York City, is as good as any and so simple that any man can make it. The use of dry earth or sifted coal ashes, the contents removed to a covered bin and again dusted with earth soon becomes a deodorized fertilizer of great value.

Sewage Irrigation.—The kitchen and other slops from the house should be utilized for the same purpose. If there are sink and bath pipes they should be so laid that the fluids may be conveyed directly to the soil for purposes of irrigation. In passing, be it said, that all plumbing should be open—nothing covered even with pipes; or by putting in short ones the slops can be utilized by a simple device of a barrel with a cover placed on a hand truck and made to tilt, so as to empty the barrel easily. Much more sanitary is a galvanized iron receptacle, because it is more easily kept clean. With either applications at stated times of boiling soda or lye water with an old broom, are all that is necessary for cleanliness. Why cannot the poorest farmer, by these means, have his raspberries and blackberries so wholesome and appetizing? The living earth, with its useful bacteria, is our only efficient scavenger, and is enriched by what it cleanses; our only reliable filter which affords an impassable barrier to infection. Sewage must be applied to the soil however, before important putrefactive changes have taken place. Tillage only is necessary to keep the soil healthy, and its capacity for disposing of sewage unimpaired. Well cultivated soil producing good crops has never yet been proved a source of danger to health.

If the soil be sterile, then it no longer is capable of causing chemical changes in organic matter. The whole subject of bacteria is wonderfully fascinating. In the towns of England it is presumed that the sewage question may be solved as in recent experiments by cultivating the proper micro-organisms in the tank containing the sewage to produce the process of oxidation and petrification.

Sunshine and Pure Air.—The trees about our dwellings should be deciduous and trimmed high, so that we may have the sunshine in winter and the shade in summer. With shade in winter we have damp and must and it may be malaria. Malaria haunts decaying vegetation everywhere, and vigilance is the price of freedom.

Our houses, first of all, should be so

located and built that there be no dampness or must or dangerous effluvia beneath them, either in the basement or cellars. Ventilation should be provided for in the foundations. Organic vapors of various kinds necessarily develop in every occupied dwelling from the daily cooking operations and the organic matters of the food and their remains. These are harmless when fresh, but are subject to early decomposition and at once become noxious. Therefore every house should be often swept by a current of fresh air, sufficient to remove all vestige of impurity. Over the kitchen stove or range there should be an escape pipe for the smoke and odors generated in cooking, with a ventilator in the chimney. Let the water run free through the pipes for a few minutes in the morning that it be not imbued with lead. See that the drain pipes, if there be any, are flushed daily, and twice a week with boiling soda or lye water; three gallons is none too much to do this well and the work should not be entrusted to a careless hand.

Care of Rooms and Bedding.—Each apartment should also be ventilated, either by open fires or other effectual means. It seems hardly necessary to say how important it is that our sleeping and living rooms should have an abundance of sunshine and pure air; that the bedclothing should be thrown free from beds on arising in the morning; boys and girls should both be taught to do this, and as often as time and strength permit; the coverings, mattresses and pillows should be hung in the sun and air. Coverings of unbleached muslin to tie on mattresses are easily removed and so ensure cleanliness. Straw matting or, better, rugs that can be taken out to shake are preferable to carpets. Let the hangings be simple and washable in our bedrooms; they are now of such dainty patterns as to please the most fastidious taste.

To secure an abundance of fresh air in sleeping rooms and avoid draughts on the sleeper requires some care; we must not forget that there should be an outlet for impure and an inlet for pure air. A broad board fitted under the sash when open, a blanket thrown over a clothes-horse and placed as a screen before the open window will answer. An objection is often made to the admittance of night air into our sleeping rooms as unwholesome. How in the name of common sense can we have other than night air at night? And certainly, even if damp, it is far better than impure, confined dry air.

(To be Continued.)



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PATENTS

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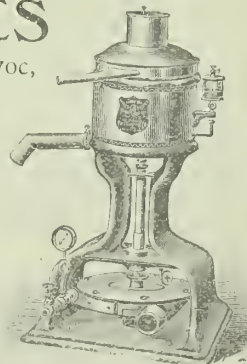
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List of U. S. Patents for Pacific Coast Inventors.

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FOR THE WEEK ENDING MARCH 22, 1898.

601,123.—AWL—N. D. Chase, Pokegama, Cal.
601,014.—STARTING GATE—P. A. Finigan, S. F.
601,135.—THAWING MACHINE—H. K. Greenleaf, Portland, Or.
601,097.—MAGAZINE FIREARM—J. Harle, Vancouver, Wash.
601,002.—HANE FOR SAILS—J. S. Jennings, S. F.
601,099.—LINENWAY—M. F. Kohinka, Scotia, Cal.
601,212.—GOLD EXTRACTOR—S. P. Moody, Magalia, Cal.
600,926.—SULPHURING CASKS—P. J. Nicolini, Oakland, Cal.

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Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

FOLDING COT-BED.—H. C. Niemeyer, Wheatland, Cal. No. 600,647. Dated March 15, 1898. This invention relates to an improved construction of cot-beds whereby when extended they are given all the rigidity of a solid structure, but are capable of dismounting and folding into small compass for transportation. It consists essentially of main side bars, extensions hinged in line therewith adapted to fold and unfold upon the main bars, having the abutting ends beveled, a flexible covering secured along the edges of the main bars and extension bars adapted to be detachably connected with the ends of the covering having mortises upon their ends to fit corresponding tenons upon the ends of the extension side bars, legs pivoted beneath the ends of the main portion adapted to fold and unfold about their pivot points, and jointed brace rods extending from the main side bars to the legs, so that the latter are braced longitudinally, and other braces between the legs at each end, with means for drawing the lower parts of the legs together to produce a transverse tension on the flexible covering and lock the cross-bars in place.

QUARTZ MILL.—H. H. Crain and J. W. Forbes, Plymouth, Amador Co., Cal. No. 600,635. Dated March 15, 1898. This invention relates to a mill which is especially designed for crushing quartz and other material. It consists of a mortar having an unyielding bed, weights with links by which the opposite ends are suspended, the bottom of said weights lying approximately parallel with the bed when suspended in the normal position, and means comprising a crank shaft and pinion extending therefrom to points near the centers of the weights, whereby they are alternately lifted above the surface of the bed and brought down upon it with a plunging movement, said links being flexibly jointed at points in their length, so as to permit of an independent movement of the weights when they strike the material below.

ANTI-FRICTIONAL HANK FOR SAILS.—J. S. Jennings, San Francisco, Cal. No. 601,002. Dated March 22, 1898.—This invention relates to an improvement in devices for the operation of sails of that class which are adapted to be raised and lowered upon a rope or stay, such as jibs, staysails and others of a like character. It consists of a device for detachably connecting sails with the stay upon which they are to be raised and lowered, this device comprising a two-part yoke, the lower end of which is made concave to fit the bolt rope upon the edge of the sail, lugs projecting upwardly through each half of the yoke, a bolt passing through the lugs and the sides of the yoke, so that this portion is united together and channels formed for the seizings by which the sails are attached to the yoke. The upper end of the yoke has a concave roller journaled within it adapted to travel upon the stay, the journal-pin serving to unite the upper ends of the yoke together.

DEVICE FOR SULPHURING CASKS.—P. J. Nicolini, Oakland, Cal. No. 600,926. Dated March 22, 1898. This invention is designed to provide a means for purifying wine casks, hose and other conveyors which are employed in transferring wine from one receptacle to another, and also to prevent the deterioration of the wine within the cask or other receptacle when a portion has been withdrawn and the upper part of the receptacle contains air. This invention consists of a furnace chamber having a grate in the lower portion consisting of parallel bars standing on edge, so as to receive and vaporize the sulphur-impregnated strips which are ignited thereon, a plurality of screens of different mesh situated above the grate and adapted to arrest any ash or floating material, a propelling device connected with the side of the upper part of the case and a means for actuating the same, and a pipe connected therewith through which the fumes may be introduced into the cask. The sulphur-impregnated strips, being placed on edge between the parallel bars, are sustained in such a manner as to allow free ingress of air for the combustion to produce the sulphur fumes and are kept out of contact with each other.

Coast Industrial Notes.

—The price of Oregon sheep has increased from \$1.50 to \$2 per head.

—Grading has begun on the Stockton & Tuolumne County, Cal., railroad.

—The California Powder Works at Santa Cruz, Cal., has a Government order for 3,000,000 pounds brown prismatic powder.

—Work has begun on the Ohio Canal Co.'s ditch from the Colorado river, twenty miles from Ehrenburg, Arizona. When completed, the canal will be twenty-two miles long.

—The steamer Wellington, from Comox, B. C., has arrived at San Francisco with a cargo of coke—believed to be the first ship arriving with a full cargo of coke of Pacific coast manufacture.

—A fir log was recently cut in Skagit county, Wash., that scaled 32,444 feet. It was 48 feet long and nearly 9 feet in diameter. Another fir log scaled 16,000 feet, and weighed 68,000 pounds.

—The sugar plant in construction at La Grande, Oregon, will cost \$400,000. To keep the plant in operation requires 350 tons of beets a day and 7000 cords of wood for its season of operation, about 100 days.

—The British Columbia salmon pack for last season gives the following totals: Fraser river pack, 860,459 cases; Skeena river, 65,905; Rivers inlet, 40,207; Naas river, 20,847; Lowe inlet, 10,666; Namu harbor, 4357; Alert bay, 8602; west coast Vancouver island, 4434. Total pack for the season, 1,015,477 cases, compared with 601,570 the previous season.

—The cargo trade of the lumber mills of British Columbia amounted in 1897 to 68,000,000 feet, valued at \$608,980. Of this amount the United States received about 250,000 feet. Australia bought nearly one-third of the total exported, Europe about one-fourth, China one-eighth, also Japan. Of the sixty-four cargoes twenty-seven went from Vancouver and seventeen from Chemainus.

—At Portland, Or., Inman & Poulson have begun the construction of a lumber raft, to be towed to San Francisco. It will be built upon a cradle of heavy timbers, bolted and chained, and will hold 5,000,000 feet of lumber, which is as much as ten ordinary lumber vessels can carry. The lumber will be placed in layers alternating each other crosswise, then secured by chains, to make the mass solid and compact. It will be 200 feet in length, 30 feet wide and 28 feet deep.

—Gen. Agt. Maze of the Union Pacific says: "The Vanderbilts, in co-operation with the Morgan interest, have secured the control of the Oregon Short Line stock, and in its purchase they have secured the controlling interest in the Oregon Navigation Co. The Vanderbilts asked for the presidency for Mr. Burt, and the office was accordingly given to him. The consolidation controls the Ogden gateway and with it the great Northwest. The Vanderbilts control the New York Central from New York to Chicago; the Chicago & Northwestern from Chicago to Council Bluffs, Ia.; and the Union Pacific from Council Bluffs to Ogden, and a controlling interest sufficient for a freeze-out of the other interests in the Short Line and the Oregon Ry. & Navigation Co. The total length of the line will be, including the branches, over 6000 miles, and exclusive of the New York Central, this line across the country will be known as the Union Pacific. It is believed that as soon as the details are completed that a new force of officers for the two roads leading out of Salt Lake City will be appointed. The additional mileage to the present Union Pacific system will be 1705 miles of road. The Short Line runs from Granger, Wyo., in a northwesterly direction to Huntington, Or., where it joins the Oregon Ry. & Navigation Co., which runs to Portland, a distance of 945 miles. Another branch runs from Salt Lake to Frisco, Utah, 275 miles, while still another branch runs northward from Salt Lake. The idea of constructing a line of 400 miles from Frisco, Utah, across Nevada to Vanderbilt, Cal., the terminal of a Los Angeles line, has been discussed, but it is feared that the Southern Pacific would retaliate by turning over all their Pacific coast business to the Rio Grande Western at Ogden." Mr. Maze says that when all the details are ended, however, that the Southern Pacific will be found in the consolidation, or its influence represented in the board of directors of the new company.

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An Overworked Brain.

From the Record, Pierceton, Ind.

Determined to rise in his chosen profession as an educator, Ernest Kemper, of Pierceton, Ind., overtaxed himself mentally and physically. He was ambitious; his mind was always on his work. From early morn until late at night he continually pored over his books.

"Burned the candle at both ends." Few persons, even with the strongest constitutions, can keep up under such a strain.

In addition to his studies, Mr. Kemper was teaching a school some three miles from his home. Finally, his excessive study and the exposure of going to and from school in all kinds of weather undermined his health.

He was taken to his bed with pneumonia and his overworked brain almost collapsed. For several weeks he was seriously ill.

Catarrah had taken root in his system and his mind was in a delicate condition. He was sent to Co-rado where he spent three months without receiving any benefit.

Then a noted specialist from Cleveland treated him without avail, and then a hospital in Chicago was tried, but all absolutely without benefit. Finally his physician recommended Dr. Williams' Pink Pills for Pale People, and from the first box he began to improve.

When he had taken nine boxes he was completely cured. This famous blood and nerve medicine had accomplished what all his former expensive treatment had failed to accomplish. Mr. Kemper says his catarrah has entirely left him; he is strong again and weighs nine pounds more than he ever did. He gives the pills the entire credit. He is starting teaching again and feels abundantly able to continue the work. To prove that the above is true in every respect, Mr. Kemper made an affidavit as follows:

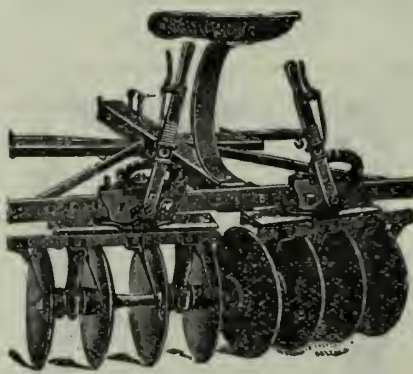
Subscribed and sworn to before me this the 10th day of September, 1897.

R. P. WATT, Notary Public.

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S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, April 6, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|----------------|------------|
| Wednesday..... | \$1 04 @ 1 03½ | \$ 83 @ 82 |
| Thursday..... | 1 03½ @ 1 03½ | 81½ @ 82½ |
| Friday..... | 1 04 @ 1 03½ | 83 @ 82½ |
| Saturday..... | 1 05 @ | 83½ @ 85 |
| Monday..... | 1 05½ @ 1 05½ | 84½ @ 85½ |
| Tuesday..... | | |
| * Election. | | |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|--------|---------|
| Wednesday..... | 7s 5½d | 7s 00½d |
| Thursday..... | 7s 5½d | 7s 01d |
| Friday..... | 7s 5½d | 7s 01½d |
| Saturday..... | 7s 6½d | 7s 02½d |
| Monday..... | 7s 6½d | 7s 02½d |
| Tuesday..... | 7s 6½d | 7s 02½d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|-----------------|-----------------|
| Thursday..... | \$1 46½ @ 1 46½ | \$1 39½ @ 1 40½ |
| Friday..... | 1 46½ @ | 1 40½ @ 1 39½ |
| Saturday..... | @ | 1 40½ @ 1 41 |
| Monday..... | 1 49½ @ 1 53½ | 1 41½ @ 1 44½ |
| Tuesday..... | 1 51½ @ 1 52½ | 1 42½ @ 1 42½ |
| Wednesday..... | 1 52½ @ 1 53½ | 1 42 @ 1 44½ |

Wheat.

While the wheat market is strong in tone, sales of the actual grain could not be made at a very marked advance at this writing (Wednesday) over the figures quoted a week ago. Export business has been brought almost to a standstill in consequence of prices here being above the parity of values in foreign centers. Trading has been almost wholly in a speculative way and on paper instead of in actual grain. Eastern and foreign speculative markets showed gains, but they were decidedly less pronounced than the upward movement here in Call Board values. Chicago stiffened about 2c per bushel and Liverpool futures advanced the equivalent of 4c per cental. In the local Call Board May wheat jumped up about 7c and December about 5c, the strength here being largely due to local weather conditions. The speculative market at the close, however, was easier in tone than on preceding day, owing to showers having improved the crop prospects in some localities.

The outlook for the wheat crop in this State is little more favorable at this writing than it was at date of former review. There is now no doubt that the California wheat yield for 1898 will be light, but just how light will depend on how timely and numerous showers may prove during this month and the early portion of May. It is now too late for rain to do any material good in a sufficient area to demonstrate conclusively that the crop will be below the normal. With no improvement in conditions, however, from this time forward, there is every probability of there being more than enough for home requirements. Values must, therefore, be regulated mainly by prices in foreign importing markets, less freight rates hence and incidental expenses of shipment. Scarcity of wheat weakens freights, but there is a point beyond which ocean freight rates are not apt to decline, as ships find it more profitable, as a rule, to lay up than to accept, say less than 17s 6d on iron carriers to Cork for orders, usual option. Recent charters are reported down to 18s 9d, which is only 3d—equivalent to about 30 cents per ton—less than the low water mark above noted. Even should there be no surplus, which is wholly improbable, the conditions affecting values would not be changed very materially, as wheat from adjoining States and Territories is bound to be landed in this market in considerable quantity. This is a regular occurrence when California's crop proves heavy, and certainly would not fail to be the case with local conditions more favorable than ordinarily for the disposal of outside wheat.

| | |
|-------------------------------------|-----------------|
| California Milling..... | \$1 52½ @ 1 57½ |
| Cal. No. 1 shipping, alongside..... | 1 47½ @ 1 50 |
| Oregon Valley..... | 1 47½ @ 1 50 |
| Walla Walla Blue Stem..... | 1 47½ @ 1 55 |
| Walla Walla Club..... | 1 42½ @ 1 47½ |

CALL BOARD PRICES.

On San Francisco Call Board prices for No 1 white wheat per cental for the week were as follows for the options named:

| |
|--|
| May, 1898, delivery, \$1.46½ @ 1.53½. |
| December, 1898, delivery, \$1.39½ @ 1.44½. |
| Wednesday, at regular noon session of Call Board, May wheat sold at \$1.52½ @ 1.53½. |
| December, 1898, \$1.42 @ 1.44½. |

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|---------------|----------------|
| Liv. quotations..... | 6s1d @ 6s2½d | 7s10d @ 7s11d |
| Freight rates..... | 15 @ 16½s | 17½ @ 20s |
| Local market..... | \$1.30 @ 1.35 | \$1.47½ @ 1.50 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on March 1st and April 1st:

| Tons— | March 1st. | April 1st. |
|-------------|------------|------------|
| Wheat..... | 68,220 | *57,413 |
| Barley..... | 23,184 | †17,350 |
| Oats..... | 3,054 | 2,745 |
| Corn..... | 718 | 721 |

* Including 25,985 tons at Port Costa, and 28,941 tons at Stockton.
† Including 9,435 tons at Port Costa, 3,406 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 10,807 tons for month of March. A year ago there were 33,638 tons wheat in Call Board warehouses.

Flour.

Values show little quotable improvement, and it is the exception where, in fact, extreme current quotations are realized in a regular way. At the same time, the market presents a generally healthier tone than it has at any previous date since the beginning of the year. Were it not for the comparatively stiff prices current on offal, especially on bran, values for flour would to-day be undoubtedly higher.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | \$3 25 @ 3 40 |
| Superfine, good to choice..... | 3 50 @ 3 80 |
| Country grades, extras..... | 4 35 @ 4 65 |
| Choice and extra choice..... | 4 75 @ 4 90 |
| Fancy brands, jobbing..... | 4 90 @ 5 10 |
| Oregon, Bakers' extra..... | 4 25 @ 4 50 |
| Walla Walla, Bakers' extra..... | 4 25 @ 4 50 |

Barley.

Firmness has continued to be a prominent feature of the barley market, and predictions are numerous that higher values than have been current thus far this season will be established before next harvest. Although supplies are light, both here and in the interior, a vessel was cleared for London, within the week under review, barley constituting the main part of the cargo. This grain was secured, of course, when prices were low. Values are now too high for the European market, no matter how low freight rates might be secured. There were some sharp advances in the speculative market, with trading active and demand principally for December delivery, which calls for new crop barley, and, being the most remote, is given the preference by the majority of operators on Call Board. On May contracts deliveries can be made in less than thirty days, and the larger part of the army of speculators, especially the small fry, do not care to take chances of being called upon to receive actual grain in 100-ton lots.

| | |
|---------------------------------|---------------|
| Feed, No. 1 to choice..... | 1 22½ @ 1 26½ |
| Feed, fair to good..... | 1 30 @ 1 22½ |
| Brewing, No. 1 to choice..... | 1 27½ @ 1 32½ |
| Chevalier, No. 1 to choice..... | @ |
| Chevalier, No. 2..... | @ |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

| |
|---|
| May, 1898, delivery, \$1.19½ @ 1.26. |
| December, 1898, delivery, \$1.18 @ 1.25½. |
| Wednesday at regular noon session of the Call Board May, 1898, feed sold at \$1.22 @ 1.25½; Dec., 1898, \$1.22 @ 1.25½. |

Oats.

Values for both feed and milling descriptions have been again advanced, this cereal moving up correspondingly in price with barley. Receipts of oats lately have been of fair magnitude, but reduced offerings of other feed cereals have increased the demand for oats, and enabled holders to effect transfers at a substantial improvement on prices prevailing during the early part of the season. Trading is almost wholly in White and Surprise. There would be considerable doing in Grays, if they were offered more freely. Black and Red oats held for seed are not receiving much attention.

| | |
|-------------------------------|---------------|
| White Oats, fancy feed..... | 1 35 @ 1 40 |
| White, good to choice..... | 1 30 @ 1 35 |
| White, poor to fair..... | 1 25 @ 1 30 |
| Gray, common to choice..... | 1 25 @ 1 32½ |
| Milling..... | 1 27½ @ 1 32½ |
| Surprise, good to choice..... | 1 35 @ 1 42½ |
| Black Russian..... | @ |
| Red..... | @ |

Corn.

The tendency of prices has been against buyers, owing to stiff figures ruling on most other cereals, but the advance in obtainable rates is not as marked as on barley. Not much corn is coming forward from either home points or the East, but at extreme rates now current not much is required to satisfy the demand, which is almost wholly local.

| | |
|----------------------------------|---------------|
| Large White, good to choice..... | 1 12½ @ 1 17½ |
| Large Yellow..... | 1 10 @ 1 12½ |
| Small Yellow..... | 1 15 @ 1 17½ |
| Eastern Yellow..... | 1 07½ @ 1 10 |
| Egyptian White..... | @ |
| Popcorn, shelled, ½ lb..... | @ |

Rye.

Although the market is not quotably lower than last noted, it is better supplied, the recent advance drawing out some fairly liberal consignments.

| | |
|--------------------------|--------------|
| Good to choice, new..... | 1 15 @ 1 17½ |
|--------------------------|--------------|

Buckwheat.

Market continues firm, but values are not well defined, owing to almost total absence of offerings and no recent transfers reported.

| | |
|---------------------|-------------|
| Good to choice..... | 1 75 @ 1 90 |
| Silverskin..... | @ |

Beans.

Not much activity observable, still there is a little more inquiry reported than for several weeks preceding, and in consequence a slightly better tone to the market. Quotable values are without important change. Colored beans, more especially Bayos, are still being held at rather high levels as compared with prices for white varieties. The latter are, however, receiving the most attention. Limas are ruling quiet in this center, most of the shipments Eastward being from points of production, and the quantity required for local consumption being very light.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 50 @ 1 60 |
| Small White, good to choice..... | 1 50 @ 1 60 |
| Lady Washington..... | 1 45 @ 1 55 |
| Butter, small..... | 1 45 @ 1 55 |
| Butter, large..... | 1 60 @ 1 75 |
| Pinks..... | 2 35 @ 2 60 |
| Bayos, good to choice..... | 2 80 @ 2 90 |
| Reds..... | 2 00 @ 2 25 |
| Red Kidneys..... | 2 00 @ 2 25 |
| Limas, good to choice..... | 2 15 @ 2 25 |
| Black-eye Beans..... | 2 35 @ 2 60 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

The bean market on the Atlantic side of the continent is thus outlined by a New York authority, according to recent advices by mail, prices quoted being per 60-pound bushel:

Scarcely any new export business has been

accomplished this week, but some stock previously purchased has been shipped. In the present unsettled condition of affairs between Spain and this country shippers are not inclined to send goods to the West Indies except under the most positive orders, and to houses of known responsibility. The absence of that demand, even for a week or two, is felt here, as the home trade for some reason keeps very dull. Under these conditions it has been difficult to prevent weakness in Marrow. Some receivers have held out confidently for \$1.40 for fancy marks and have made a few sales at that, but others have accepted \$1.37½ for equally as good stock, and one or two lots of average fine quality went at \$1.35. Several carlots of Canadian Medium have passed through here in bond, mostly stock that was sold exporters some time ago. Jobbing trade in State Medium has been slack and for the past few days sellers have accepted \$1.10 for the best. Pea are more plentiful than Medium and have declined to \$1.06 @ 1.07½ for choice, the outside figure now extreme, and fairish lots sold at \$1 @ 1.02½. Red Kidney still pretty well controlled, and while the demand is small at present there is a steady holding. Only a few White Kidney here and feeling rather firm. Turtle Soup have had a little more inquiry within a day or two and close firmer. Yellow Eye have declined under a very limited outlet. Trade in California Lima is slow and our outside quotation is now reached only in a jobbing way; quotable \$1.45 @ 1.50. Green peas weaker and dull.

Dried Peas.

Choice are still salable to fair advantage, both for Green and Niles, but to find custom for defective stock, prices must be materially shaded in favor of buyers.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 90 @ 2 10 |
| Niles Peas..... | 1 60 @ 1 75 |

Wool.

The local market continues to drag, and advices from the East report trade inactive on the Atlantic side. In foreign centers there is some business doing and prices are being well sustained, although sales do not aggregate so heavily as a month or two ago. Spring wool is coming forward, but receipts are light as compared with the spring of 1897. When new clip is in sufficient stock to admit of wholesale operations, values will likely be established. In the meantime, present prospects are there will be little more than a waiting market.

SPRING.

| | |
|-----------------------------------|---------|
| Oregon Eastern, choice..... | 12 @ 14 |
| Oregon Eastern, fair to good..... | 10 @ 11 |

FALL.

| | |
|------------------------|---------|
| Northern, free..... | 11 @ 13 |
| Southern Mountain..... | 9 @ 12 |

Hops.

There are not many hops now offering here, but the supply is more than ample for the immediate demand, which is exceedingly light. There are few being shipped in any direction, and local brewers have in most instances all they care to carry at present. While quotations remain without appreciable alteration, top figures are based mainly on the views of holders. On selling pressure lower prices would have to be accepted.

| | |
|--------------------------------|---------|
| Good to choice, 1897 crop..... | 12 @ 16 |
|--------------------------------|---------|

Late mail advices from New York furnish the following review of the hop market:

The market shows increasing weakness as a result of the long continued dullness. Some holders get tired of carrying stocks and enough of them offer to sell at a lower price to affect the entire line of values. A study of the statistics shows an apparently strong position, but unless there is a demand for the moderate supplies the market gets no support and settles under its own weight. This is about the condition now. So far as we can ascertain there are not much over 20,000 bales of hops on the entire Pacific coast. New York State has been drained so heavily that there are fewer hops remaining in first hands than has been the case for some years. Europe, too, is very light in stocks, and the holdings of dealers in this city and at other distributing points would not be considered at all large if there was any inquiry. Brewers still seem inclined to hold off. An occasional purchase is reported, but mostly of small lots to meet some special requirements. Some stock is still going abroad, the receipts this week including about 450 bales on through consignment from the Pacific coast, but exporters get rather cautionary advices, the English markets being about as dull as ours. Prices here must be considered largely nominal at present. We have reduced quotations slightly to more nearly represent a trading basis. Outside of choice quality the feeling is very heavy.

Hay and Straw.

The market for hay has ruled in favor of sellers since last review, although quiet part of the time. Quotations for Stable hay remained close to the figures last quoted, values being now at a tolerably high range and not likely to go much above present levels, as current figures will attract shipments to this market from points outside the State. Alfalfa and all cow and stock hay was more firmly held, values for the latter lately having been low as compared with other hay. Straw was in only moderate receipt, but was no higher than for some weeks preceding.

| | |
|--------------------|---------------|
| Wheat..... | 19 00 @ 23 00 |
| Wheat and Oat..... | 17 00 @ 22 00 |
| Oat..... | 17 00 @ 21 00 |
| Barley..... | @ |
| Clover..... | @ |
| Stock Hay..... | 11 50 @ 12 50 |
| Alfalfa..... | 11 00 @ 13 00 |
| Compressed..... | 18 00 @ 23 00 |
| Straw, ½ bale..... | 40 @ 50 |

Millstuffs.

A strong market prevailed for most kinds. Such changes as were made in quotations were all to higher figures. Firmness was especially pronounced on Rolled Barley and Bran.

| | |
|---------------------|---------------|
| Bran, ½ ton..... | 20 00 @ 21 00 |
| Middlings..... | 21 00 @ 25 00 |
| Barley, Rolled..... | 26 50 @ 27 00 |
| Cornmeal..... | 24 00 @ |
| Cracked Corn..... | 25 00 @ |

Seeds.

No new developments to record in the market for seeds of any description. Mustard seed is now offering so sparingly that it is hardly quotable in a regular way. For Flaxseed an advance is being asked. Alfalfa is receiving very little attention and market lacks strength. Birdseed ruled quiet at former range of values.

| | |
|----------------------------|-------------|
| Mustard, Yellow..... | 2 75 @ 3 00 |
| Mustard, Trieste Seed..... | 2 90 @ 3 10 |

| | |
|--------------------------|-------------|
| Mustard, Wild Brown..... | 2 00 @ 2 25 |
| Flax..... | 2 25 @ 2 40 |

Per lb.

| | |
|--------------------|---------|
| Canary..... | 2½ @ 2½ |
| Rape..... | 2½ @ 2½ |
| Hemp..... | 2½ @ 3¼ |
| Alfalfa, Utah..... | 5½ @ 6 |

Bags and Bagging.

The grain bag market is quiet, and presents a weak tone, with no changes to record in quotations. To effect free sales, however, lower prices than are nominally current would have to be accepted. That there will be much purchasing this season by consumers before harvesting begins is not probable. Wool sacks are offering at former figures, and demand for them is not active.

| | |
|--------------------------------------|---------|
| Calcutta Grain bags, buyer July..... | @ |
| State Prison bags, 22x36, spot..... | 5½ @ 5½ |
| Wool sacks, 4 lb..... | 30 @ |
| Wool sacks, 3½ lb..... | 27 @ |
| Gunnies..... | 10 @ |
| Bean bags..... | 4½ @ 4½ |
| Fruit sacks, cotton..... | 5½ @ 6½ |

Hides, Pelts and Tallow.

The hide market has remained fairly steady since last review, but has ruled quiet. Pelts brought moderately good figures, with demand fair. Tallow found custom at generally unchanged values, but tendency of the market was to more ease.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|----------|
| Heavy Steers, over 56 lbs..... | @ 10 | @ 9 |
| Medium Steers, 48 to 56 lbs..... | @ 9 | @ 8 |
| Light Steers, under 48 lbs..... | @ 9 | @ 8 |
| Heavy Cow Hides, over 50 lbs..... | @ 9 | @ 8 |
| Light Cow Hides, under 50 lbs..... | @ 9 | @ 8 |
| Wet Salted Kip..... | @ 9½ | @ 8½ |
| Wet Salted Veal..... | @ 10 | @ 9 |
| Wet Salted Calf..... | @ 10 | @ 9 |
| Dry Hides..... | @ 16½ | @ 13 |
| Dry Kip and Veal, 11 to 16 lbs..... | 16 @ 16½ | 12 @ 12½ |
| Dry Calf, under 4 lbs..... | 18 @ 20 | 16 @ 17 |
| Horse Hides, large..... | 2 25 @ 2 75 | |
| Horse Hides, medium..... | 2 00 @ 2 25 | |
| Horse Hides, small..... | 25 @ 50 | |
| Colts' Hides..... | 25 @ 50 | |
| Pelts, long wool, per skin..... | 90 @ 1 15 | |
| Pelts, medium, per skin..... | 70 @ 90 | |
| Pelts, short wool, per skin..... | 40 @ 60 | |
| Pelts, shearling, per skin..... | 15 @ 30 | |
| Deer Skins, best summer..... | 25 @ 30 | |
| Deer Skins, good medium..... | @ 20 | |
| Deer Skins, thin winter..... | @ 10 | |
| Elk Hides..... | 10 @ 12 | |
| Tallow, good quality..... | 3 @ 3½ | |
| Tallow, No. 2..... | 2 @ 2½ | |
| Goat Skins, perfect..... | 30 @ 37½ | |
| Goat Skins, damaged..... | 10 @ 20 | |
| Kid Skins..... | 5 @ 10 | |

Honey.

A ship sailing this week for Hamhurg took 316 cases. Sellers are not nearly so numerous as early in the season, and are inclined to be quite exacting at present in the matter of prices. Market is strong for both comb and extracted, with supplies of latter light and stocks of comb showing steady decrease. The firmness is based mainly on the poor prospects for coming crop.

| | |
|------------------------------|---------|
| Extracted, White Liquid..... | 5½ @ |
| Extracted, Light Amber..... | 4½ @ 5¼ |
| White Comb, 1-b frames..... | 8½ @ 10 |
| Amber Comb..... | 6½ @ 7½ |

Beeswax.

Not much arriving. Offerings are, as a rule, meeting with prompt custom at full current rates. In a small way, higher prices are being realized than are quotable.

| | |
|---------------------------|---------|
| Fair to choice, ½ lb..... | 24 @ 27 |
|---------------------------|---------|

Live Stock and Meats.

There is no large quantity of Beef on market, but prevailing stiff prices are causing retailers and consumers to purchase slowly and to take hold of smaller quantities than ordinarily, when values are more reasonable. Mutton is slightly lower, but stock in prime condition is not very plentiful and still sells to fair advantage, but there is considerable inclines decidedly in favor of buyers. Hogs were arriving about as freely as preceding week, and market was lower, especially for other than choice to select, hard grain-fed of medium size. Such as came forward in poor flesh or were otherwise undesirable were slow of sale at inside quotations.

| | |
|---|--------|
| Beef, 1st quality, dressed, net ½ lb..... | 6½ @ 7 |
| Beef, 2d quality..... | 5½ @ 6 |
| Beef, 3d quality..... | 4 @ 5 |
| Mutton—ewes, 8 @ 8½; wethers..... | 8½ @ 9 |
| Hogs, hard grain fed, medium..... | 4 @ 4½ |
| Hogs, small..... | 3 @ 3½ |
| Hogs, large hard..... | 3½ @ 4 |
| Hogs, soft and feeders..... | 2½ @ 3 |
| Hogs, country dressed..... | 4½ @ 5 |
| Veal, small, ½ lb..... | 6 @ 7½ |
| Veal, large, ½ lb..... | 6½ @ 7 |
| Lamb, Yearling, ½ lb..... | 9 @ |
| Lamb, Spring, ½ lb..... | 10 @ |

Poultry.

Owing to increased arrivals of Eastern poultry the market for home product was hardly so favorable to sellers as during previous week. Young fowls of desirable size and in fine flesh sold, however, to fully as good advantage as last quoted. Old Hens of ordinary size as also Old Roosters met with a weak and slow market. Large and fat Old Chickens brought fair figures. Old Ducks and Geese were not in sufficiently heavy supply to cumber the market to any noteworthy extent. Turkeys were in limited request, with inquiry almost wholly for Hens or fat young Gohblers.

| | |
|------------------------------------|-------------|
| Turkeys, dressed, ½ lb..... | 12 @ 15 |
| Turkeys, live hens, ½ lb..... | 12½ @ 13 |
| Turkeys, live gobblers..... | 10 @ 11 |
| Hens, Cal., ½ doz..... | 3 00 @ 4 50 |
| Roosters, old..... | 3 50 @ 4 50 |
| Roosters, young, (full-grown)..... | 7 50 @ 8 50 |
| Fryers..... | 6 50 @ 7 00 |
| Broilers, large..... | 5 50 @ 6 50 |
| Broilers, small..... | 3 00 @ 4 50 |
| Ducks, young, ½ doz..... | 6 00 @ 8 00 |
| Ducks, old..... | 4 00 @ 5 00 |
| Geese, ½ pair..... | 1 50 @ 1 75 |
| Goslings, ½ pair..... | 2 25 @ 2 50 |
| Pigeons, Old, ½ doz..... | 1 25 @ |
| Pigeons Young..... | 1 75 @ 2 00 |

Butter.

Market is a little easier for creamery, or the higher priced product, but remains firm for dairy butter. Offerings are largely creamery, while the most urgent demand is principally for dairy product, on account of the latter being cheaper and at present is about as desirable for packing as the more expensive grades.

| | |
|--------------------------------|----------|
| Creamery extras, 1 lb. | 10 @ |
| Creamery firsts | 18 1/2 @ |
| Creamery seconds | 17 1/2 @ |
| Dairy select | 17 1/2 @ |
| Dairy seconds | 16 @ |
| Dairy, soft and weedy | 14 @ |
| Mixed store | 14 @ |
| Creamery in tubs | 18 @ |
| Pickled roll | 18 @ |
| Dairy in tubs | 18 @ |
| Firkin, Cal., choice to select | 18 @ |
| Firkin, common to fair | 15 @ |

Cheese.

There is a healthy tone to the market, with indications that prices have touched bedrock for the season. It is not very likely, however, that there will be any marked advance for some weeks to come, perhaps not more than enough to cover the loss by shrinkage in cheese being carried.

| | |
|-------------------------------|---------|
| California fancy flat, new | 9 1/2 @ |
| California, good to choice | 9 @ |
| California, fair to good | 8 @ |
| California Cheddar | 8 @ |
| California, "Young Americans" | 9 1/2 @ |

Eggs.

As announced last week would be the case, Eastern eggs are again on market, several carloads having arrived since close of former review. The result was to impart an easier tone, and while quotable values were without noteworthy change, buyers in many instances obtained concessions in their favor which they could not have secured a week ago. Values for good to choice eggs are not likely to recede this season materially below present levels.

| | |
|--|----------|
| California, select, large white and fresh | 15 @ |
| California, select, irregular color & size | 14 1/2 @ |
| California, good to choice store | 13 @ |
| California, common to fair store | 12 @ |
| Oregon, prime | 12 @ |
| Held Eastern, as to section and grading | 13 @ |
| Local Cold storage eggs | 12 @ |

Vegetables.

Changes in quotations were not numerous or marked, and especially was it the exception where prices were materially lower or the market more favorable to buyers than previous weeks. Onions were in reduced stock and more firmly held. Asparagus, Peas and Rhubarb are the principal spring vegetables now arriving, and these are not in heavy supply for this date.

| | |
|-------------------------------------|----------|
| Asparagus, No. 1 to choice, 1/2 box | 1 25 @ |
| Asparagus, common to fair, 1/2 box | 75 @ |
| Beans, String, 1/2 lb. | 10 @ |
| Beans, Lima, 1/2 lb. | 10 @ |
| Beans, Refugee, 1/2 lb. | 10 @ |
| Beans, Wax, 1/2 lb. | 10 @ |
| Cabbage, choice garden, 100 | 70 @ |
| Cauliflower, 1 doz. | 50 @ |
| Corn, Green, 1/2 sack | 10 @ |
| Corn, Alameda, 1/2 crate | 10 @ |
| Cucumbers, hot house, 1/2 doz. | 50 @ |
| Egg Plant, 1 lb. | 10 @ |
| Garlic, 1 lb. | 4 @ |
| Mushrooms, Butons, 1 lb. | 10 @ |
| Mushrooms, Wild, 1 lb. | 10 @ |
| Okra, Dried, 1 lb. | 12 1/2 @ |
| Onions, Yellow, good to choice | 2 25 @ |
| Onions, Yellow, cut | 1 50 @ |
| Peas, Sweet, Garden, 1/2 lb. | 1 1/2 @ |
| Peppers, Green Chile, 1/2 lb. | 25 @ |
| Rhubarb, 1/2 box | 50 @ |
| Squash, Summer, 1 lb. | 10 @ |
| Tomatoes, 1/2 box or crate | 1 50 @ |

Potatoes.

Market showed some improvement, not in the matter of values, but in the movement, the cheaper grades of Burbank Seedlings cleaning up better than for some weeks. Choice to select have been steadily favored with prompt custom at full current rates, and this condition will probably continue until the end of the season. A few new potatoes, mostly volunteer crop and under choice, are now coming forward.

| | |
|--------------------------------|---------|
| Early Rose, River, 1/2 cental | 60 @ |
| Peerless, River | 50 @ |
| Reds River | 50 @ |
| Garnet Chile, Mission | 75 @ |
| Burbanks, Salinas | 50 @ |
| Burbanks, River | 50 @ |
| Burbanks, Petaluma and Tomales | 50 @ |
| Burbanks, Humboldt, 1/2 ct | 50 @ |
| Burbanks, Oregon, 1/2 cental | 50 @ |
| Garnet Chile, Oregon | 75 @ |
| New Potatoes, 1/2 lb. | 1 1/2 @ |
| Sweet River, 1/2 cental | 75 @ |
| Sweet Merced | 75 @ |

The Fruit Market.**Fresh Fruits.**

Apples are still on market in quotable quantity, including good, bad and indifferent, and an occasional box of choice to select, the latter being the exception. Ordinary qualities sell slowly and at fully as low figures as previously quoted. Some choice out of cold storage are held at \$1.50 per box, but this figure is not obtainable for the stock in question in other than a retail way. Fancy Spitzenberg and Yellow Newton Pippins, or equally desirable variety, are salable to advantage and would command about \$1.50 for a full-size box, packed in four tiers. Strawberries are coming forward in increased quantity, but there is no noteworthy improvement to record in the quality. Most of the present offerings are entirely too green to be palatable to the taste or even pleasing to the eye. The Strawberries arriving are mainly from Watsonville and Santa Clara. Values are lower than last quoted and market is weak at the decline.

| | |
|---|--------|
| Apples, fancy, 4-tier, 1/2 box | 1 25 @ |
| Apples, choice, 4-tier, 1/2 box | 75 @ |
| Apples, fair to good, 1/2 box | 50 @ |
| Apples, common to fair, 1/2 box | 25 @ |
| Strawberries, 1/2 drawer, as to quality | 75 @ |

Dried Fruits.

Apricots are taking the lead at present in point of attention and in the matter of stiff prices, being again marked up fully 1c per lb.

The local market is quite excited on this variety, owing to prospects that the coming crop will prove light. Outside markets have failed so far to respond to the firmer figures established here, but will doubtless do so at an early date. Supplies throughout the State are light, estimated not to exceed fifty carloads of prime to fancy. Taking trashy stock into consideration, probably seventy-five cars could be mustered. Peaches are being rather firmly held, but dealers are not inclined to purchase at extreme figures, and consequently little is doing in them. For all other kinds of cured and evaporated fruits the market is lifeless, with values nominally as previously quoted. Apples are in light stock, but they are dragging and inclining against sellers. Supplies are principally Prunes of the medium sizes and these remain obtainable at the same easy figures current for some weeks past.

EVAPORATED OR BLEACHED.

| | |
|--|---------|
| Apricots, Royal, in sacks, per lb. | 6 @ |
| Apricots, Royal, fancy | 7 1/2 @ |
| Apricots, Moorpark | 8 @ |
| Apples, in boxes | 6 1/2 @ |
| Figs, fancy pressed | 8 @ |
| Nectarines, White | 4 1/2 @ |
| Nectarines, Red | 4 1/2 @ |
| Peaches, unpeeled, choice | 4 @ |
| Peaches, unpeeled, fancy | 5 @ |
| Peaches, peeled, in boxes | 9 @ |
| Pears, unpeeled Bartlett's, baled, fancy | 7 @ |
| Pears, halved, unpeeled Bartlett's | 4 1/2 @ |
| Pears, quartered, unpeeled Bartlett's | 4 @ |
| Pears, peeled and sliced | 4 @ |
| Plums, pitted | 4 1/2 @ |
| Prunes, in sacks, 40-50's | 4 1/2 @ |
| 50-60's | 3 @ |
| 60-70's | 2 1/2 @ |
| 70-80's | 2 1/2 @ |
| 80-90's | 2 @ |
| 90-100's | 1 1/2 @ |

Above figures are on basis of 2 1/2 @ 2 1/2 c for 4 sizes. Prunes in boxes, 1/2 c higher for 25-lb boxes, 1/2 c higher for 50-lb boxes.

4 sizes Santa Clara and equal 2 1/2 @

4 sizes San Joaquin and Northern 2 1/2 @

Prunes, Silver 5 @

COMMON SUN-DRIED.

| | |
|--------------------|---------|
| Apricots, ordinary | 5 @ |
| Apples, sliced | 4 1/2 @ |
| Apples, quartered | 4 @ |
| Figs, Black | 2 @ |
| Figs, White | 3 @ |
| Peaches, unpeeled | 3 1/2 @ |
| Plums, unpitted | 1 @ |

The following concerning the dried fruit market in the East is from a New York report furnished by mail of late date:

Evaporated apples have continued in moderate supply. Both jobbing and export demand has been fairly active this week and market has ruled steady. Prime have sold mainly at 8 1/2 @ 9 c, rarely higher for a high grade, and choice to extra fancy have jobbed moderately in range of 8 1/2 @ 9 c, rarely 9 1/2 @ 10 c. Grades just under prime have some attention, but poorer stock not wanted. Sun-dried are held with more or less confidence, but demand light and outside figures full. Chops firm though not exceeding 3 1/2 @ 3 3/4 c often enough to establish a higher quotation. Cores and skins dull and easy. Small fruits have shown no material change. Raspberries offered freely from the interior at 10 c or less, though spot jobbing sales still reported at 10 1/2 @ 11 c; scarcely any demand for sun-dried. Cherries in few hands and generally held higher than quoted. Huckleberries steady. Blackberries receiving a fair inquiry and held with a little more confidence. California fruit has met a fairly active demand and tone is firm, especially for the cheaper grades. Advances from the Pacific coast report considerable damage by recent frosts.

| | |
|--|---------|
| Apricots, Cal. Moorpark, 1897, per lb. | 8 @ |
| Apricots, Cal. Royal, 1897, per lb. | 5 1/2 @ |
| Peaches, Cal., 1897, peeled, per lb. | 10 @ |
| Peaches, Cal., 1897, unpeeled, per lb. | 5 @ |
| Pears, Cal., 1897, per lb. | 5 @ |
| Prunes, Cal., 1897, per lb. | 3 @ |

Raisins.

There is no improvement to record in this market, either as regards inquiry or prices obtainable. Quotations remain the same as a week ago. Outside of inferior and rain-damaged raisins, stocks are not so heavy but what they could be absorbed by a moderate demand during the balance of the season.

F. O. B. FRESNO DELIVERY.

| | |
|----------------------------------|---------|
| Imperial Clusters, per box | 1 00 @ |
| Dehesa Clusters, per box | 1 00 @ |
| Fancy Clusters, per box | 1 00 @ |
| Boxes, London layers, 20-lb box | 1 00 @ |
| (Usual advance for fractions.) | |
| Loose Muscatel, 4-crown, 1/2 lb. | 3 1/2 @ |
| Loose Muscatel, 3-crown | 2 1/2 @ |
| Loose Muscatel, 2-crown | 1 1/2 @ |
| Sultanas | 3 1/2 @ |
| Seedless Muscatel | 1 1/2 @ |
| Dried Grapes | 1 @ |

Citrus Fruits.

Orange market was fully as low as preceded week, with stocks not quite so heavy, perhaps, as immediately prior to last review, but more than required by the demand. Supplies ran largely to common and medium qualities, and this tended to keep prices at a low range. Lemons were plentiful and cheap, but with this fruit, like oranges, common qualities were in more liberal supply than choice to select. Limes were plentiful, as compared with the demand, and quotations were slightly reduced.

| | |
|-----------------------------|--------|
| Oranges—Navel 1/2 box | 1 00 @ |
| St. Michaels | 1 00 @ |
| Seedlings | 50 @ |
| Lemons—Cal. select, 1/2 box | 1 50 @ |
| Cal., good to choice | 1 00 @ |
| Cal., common to good | 50 @ |
| Limes—Mexican, 1/2 box | 4 00 @ |
| Cal., small box | 50 @ |

Nuts.

Almond market is firm and tending higher, as coming crop will be insignificant and stocks now remaining in the State are estimated not to exceed five carloads. Walnuts of choice quality are being very steadily held, but there are some inferior nuts which are obtainable at almost any price. Peanut market is quiet but steady, with offerings quiet.

| | |
|---------------------------------|---------|
| California Almonds, paper shell | 8 @ |
| California Almonds, soft shell | 6 @ |
| California Almonds, hard shell | 4 @ |
| Walnuts White, paper shell | 6 @ |
| Walnuts White, soft shell | 6 @ |
| Walnuts White, Cal., standard | 4 1/2 @ |
| Chestnuts, Cal. Italian | 8 @ |
| Peanuts, Cal., fair to prime | 3 1/2 @ |
| Peanuts, Eastern hand-picked | 5 @ |
| Pine Nuts | 7 @ |

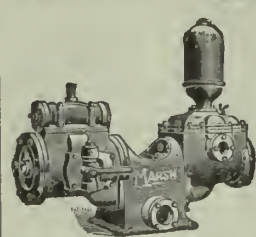
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Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|-----------------|--------------------|----------------------|
| Flour, 1/2-sks. | 131,121 | 3,501,645 |
| Wheat, cts. | 190,391 | 9,247,422 |
| Barley, cts. | 41,803 | 4,188,384 |
| Oats, cts. | 11,890 | 515,134 |
| Corn, cts. | 3,850 | 257,528 |
| Rye, cts. | 140 | 32,913 |
| Beans, sks. | 2,208 | 509,182 |
| Potatoes, sks. | 17,416 | 916,274 |
| Onions, sks. | 642 | 90,937 |
| Hay, tons. | 1,757 | 104,281 |
| Wool, bales. | 1,742 | 52,603 |
| Hops, bales. | 12 | 8,188 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|-----------------|--------------------|----------------------|
| Flour, 1/2-sks. | 28,236 | 2,487,332 |
| Wheat, cts. | 112,962 | 9,042,654 |
| Barley, cts. | 18,907 | 2,898,404 |
| Oats, cts. | 611 | 14,202 |
| Corn, cts. | 918 | 34,527 |
| Beans, sks. | 633 | 278,730 |
| Hay, bales. | 921 | 61,311 |
| Wool, lbs. | 13,701,776 | 12,164,249 |
| Hops, cts. | 1,320 | 1,210,554 |
| Honey, cases | 5 | 6,695 |
| Potatoes, pkgs. | 955 | 174,738 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, April 6.—California dried fruits—Apples steady and other fruits quiet; evaporated apples, common, 5 @ 7 1/2 c; prime wire tray, 8 1/2 c; wood dried prime, 8 1/2 @ 8 3/4 c; choice, 8 1/2 @ 8 3/4 c; fancy, 9 @ 9 1/2 c. Prunes, 3 1/2 @ 7 1/2 c per pound. Apricots, Royal, 5 1/2 @ 7 c; Moorpark, 8 @ 10 1/2 c. Peaches, unpeeled, 5 @ 9 c; peeled, 11 @ 16 c.

For Sale.—A Ditching Machine.

Cuts any width from 4 to 15 feet, and 6 or 7 feet deep. Can make 600 feet a day in reclaimed marsh land, cutting 8 feet wide and 7 feet deep; and over 300 feet in upland in hard yellow clay. Can be worked in any ground that a horse can travel over. Machine can also do the work of an ordinary steam shovel. Address JOHN W. FERRIS, 330 Sansome St., S. F.

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NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 108 Davis St., San Francisco, at 10 o'clock A. M., Wednesday, the 13th day of April, 1898.

CHARLES WOOD, I. C. STEELE,
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From Stockton.

Stockton, April 4th, 1898.

TO THE EDITOR:—Stockton Grange has been holding very interesting meetings lately and the discussions have taken wide range; among them the Interstate Commerce Commission has held the attention of the members, culminating in the following resolutions:

WHEREAS, By recent decisions of the Supreme Court of the United States the powers that were supposed to exist in the act creating the Interstate Commerce Commission and defining its duties were declared unconstitutional, thus leaving the Commission powerless to act as the people desired and Congress intended by the passage of the act creating it, therefore be it

Resolved, By Stockton Grange No. 70, P. of H., that it is in favor of the passage of Senate bill No. 3354, introduced by Senator Culom of Illinois, to so amend the laws governing the Interstate Commerce Commission that the Commission will have the power that we always supposed it had, and should have, to regulate the rates charged by the railroads upon the commerce of this country;

Resolved, That a copy of these resolutions be sent to the Senators and representatives of the State of California, and to the members of the Committee on Interstate and Foreign Commerce of the United States Senate and House of Representatives at Washington, D. C. Also that a copy be sent the press of Stockton and to the RURAL PRESS of San Francisco, Cal. Respectfully submitted,

(Signed) J. L. BEECHER, Comm'r.

In the matter of its weekly meetings Stockton Grange has taken a new departure. The second Saturday in the month will, until further notice, be an outing day with us, as the Grange session will be held on that day at the homes of different members. March 12th we met at Bro. J. L. Beecher's and had one of the best meetings held this year. Next Saturday, April 9th, we will meet at Bro. Harelson's, and hope to meet there many of the ex-members of the Order, as the afternoon will be open to friends.

N. T. Root, Sec'y.

Grange Organized at Napa.

The Napa Register reports the organization of a Grange at that place, officered as follows: Master, A. D. Butler; Overseer, D. J. Brown; Lecturer, J. S. Taylor; Steward, H. R. Borrette; Assistant Steward, John McCollum; Chaplain, H. N. Fossett; Treasurer, C. H. Anderson; Secretary, R. A. Brownlee; Gate Keeper, G. W. Hill; Pomona, Mrs. Borrette; Flora, Mrs. H. Swift; Ceres, Mrs. McCollum; Lady Assistant Steward, Miss Beatrice Benson. Worthy Master Greer of Sacramento and District Deputy Winans of Petaluma were the organizing officers.

Working Out the Details.

Once in awhile the Tribune receives a letter describing briefly some proposed invention, and winding up with some such phrase as this: "I only throw out the crude idea now; but I think it would be easy to work out the details." Sometimes the writer intends to conduct the latter part of the proceedings himself; sometimes he wants a manufacturer to undertake the task. But in either case, he considers the "working out of the details" a trifling matter, and usually believes that the main part of the work has already been done in conceiving "the crude idea."

This is a very common, but really a serious, error. A great many things which look all right, while still existing only in the mind of the inventor, develop some unforeseen defect as soon as they are put to a practical test. Long before Edison's day, for instance, other men had the "crude idea" that light could be produced by heating to incandescence a filament of some substance by sending a current of electricity through it. In fact, they knew it. But none of them produced a successful lamp. And it took Edison five or ten years, and cost him many thousands of dollars, to "work out the details." He found that platinum was unavailable for a filament, and that carbon was better. He sent men all over the world, to the jungles of India and to the forests of the Amazon, to get different kinds of vegetable fiber with which to experiment, so that he might find the

best. Then he discovered that a better vacuum was needed, instead of the bulbs, than could be secured with ordinary air pumps, and so he went to work to invent an improved air pump of his own. Besides these other important details, there was this essential problem requiring attention: How could he persuade just the right amount of electricity to leave the main wire and go into each lamp. Too little would leave the lamp dim. Too much would burn it out instantly. Some of the most famous electricians in the world said that the thing could not be done. Edison did it, though; and if he had not achieved this success, his lamp would not have worked. A dozen other such instances, in the career of Edison alone, could be cited. There is one, taken from the life of Sir Henry Bessemer, of England, who died a few weeks ago, having conferred more benefit on the civilized world than any other inventor of the present century, and having derived over \$5,000,000 from his patents.

Forty-five years ago steel cost \$250 or \$300 a ton. Now it can be had for \$20 or \$25. The reduction in price is partly the result of the use of machinery in the operations of manufacture, and of the cheaper transportation of ore. But the chief factor in the change is the invention of Bessemer's process of making steel. Pig iron contains too much carbon. Sir Henry melted it in a huge egg-shaped flask, called a "converter," forced powerful air jets into the bottom of the latter, and thus burned out the impurities. But his invention was not complete when he made it public in 1856. He experienced great disappointment, suffered vigorous criticism and denunciation as an impostor, spent \$50,000 or \$100,000 in addition to his first outlay, sent all over the world for samples of ore and pig iron, and conducted elaborate chemical experiments before he learned how to overcome three difficulties that he had not foreseen at first. Nearly four years were consumed in this task. And if he had been a man of less patience,

thoroughness and energy, he would have failed.

We cannot all be Edisons and Bessemers. Only a few inventors have the ready money to expend as these two men did. But they both began life as poor boys. They made their own fortunes. And they did so even more by "working out the details" themselves than they did by their "crude ideas."

THE Review thinks that in case war is declared between the United States and Spain it is probable that the electrical fraternity will play a very important part in whatever actions may ensue. The setting and operation of submarine and subterranean mines involve considerable technical and engineering skill and a knowledge of electrical engineering. The American Institute of Electrical Engineers num-

bers among its membership many expert electricians who would undoubtedly volunteer their services to the Government for such work. A number of electricians have already enlisted as privates in the two new artillery regiments recently created, and it is undoubtedly a fact that when the real need of the services of trained electricians is made apparent it will be at once met by volunteers.

The wings of birds are not only to aid locomotion in the air, but also on the ground and water. One bird even has claws in the "elbows" of its wings to aid it in climbing trees. The clothing is a modification of the skin, just as hair and nails are, and sometimes it closely resembles hair.

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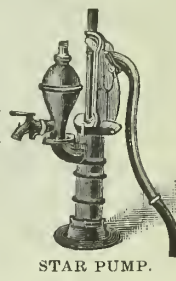
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| III. California Climate as Related to Vegetable Growing. | XXII. Egg Plant. |
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| XVIII. Celery. | XXXVII. Seed Growing in California. |
| XIX. Chicory. | XXXVIII. Garden Protection. |
| | XXXIX. Weeds in California. |

COMMENDATIONS BY THE PRESS.

The work will be of inestimable assistance to those who are interested in vegetable growing in California, not only on a large scale, but to the large number who cultivate these products for their own consumption.—*San Francisco Call*.

We take no risk in advising every Californian who has a garden spot to procure a copy.—*San Francisco Chronicle*.

Not only interesting but valuable to every one in this State who cultivates ever so small a lot of ground. The author is eminently qualified for the work which he has just completed.—*San Francisco Bulletin*.

For many years there has been an inquiry for a work on vegetable growing in California, and in this book the demand has been adequately met.—*California Fruit Grower*.

It is certain to be of valuable assistance to the practical farmer.—*Oakland Enquirer*.

It is really almost invaluable, we should judge, to those who desire to be informed upon every essential point connected with vegetable growing in the various soils and climates of this State.—*Sacramento Bee*.

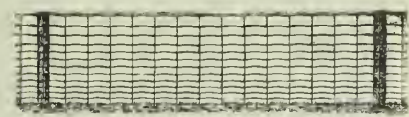
It is an exhaustive exposition of the cultivation of vegetables in this State. There is a fund of information in it which is invaluable and indispensable for the man who would make a success of vegetable growing.—*Alameda Enquirer*.

This treatise will be conceded to be an authority upon the subject of California vegetables. It ought to have a very wide circulation.—*Woodland Democrat*.

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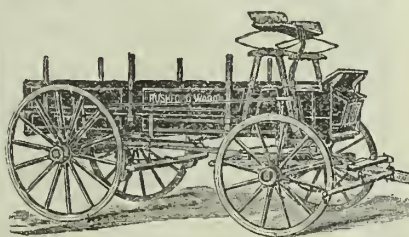


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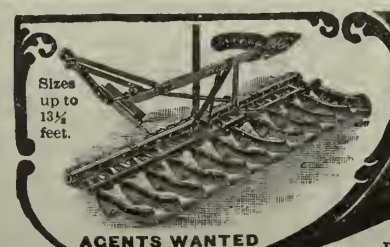
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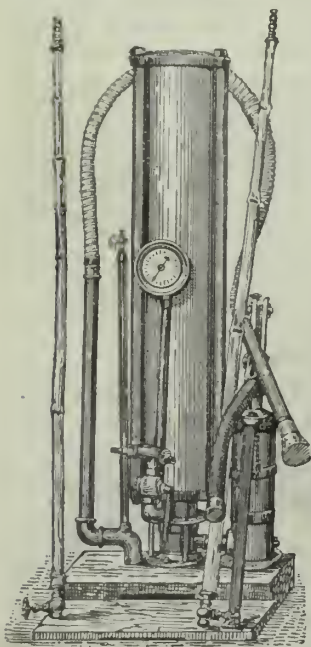
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 16.

SAN FRANCISCO, SATURDAY, APRIL 16, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

A Disease of the Olive.

Another illustration of the progress which science is making in detecting the subtle causes of plant disease is conveyed by the publication which we make in this issue concerning the outcropping of a disease of the olive in Merced county. The interesting sketch of the disease given by Mr. Bioletti shows that it is not a new disease, but it is practically new to our State, and this early demonstration of its presence will place in the possession of our olive growers that

with the text of Mr. Bioletti's bulletin, which is given on page 244, should enable the olive grower to detect the presence of the disease should it appear on his trees. Care should, however, be taken not to be alarmed by certain knotty excrescences which are natural to the tree and are normal in their character. The gnarls shown in one of the pictures of a tree trunk are the manifestations to which we refer. Mr. Bioletti shows that the tree disease may occur in connection with them and may be recognized in such a place, but the appearances on the small wood and on the leaves as well will probably be the more trustworthy symptoms.

There is no reason to anticipate any rapid extension of this disease. It can only appear where the specific germ is introduced, and it may be checked by cutting and burn-

ing the losses which otherwise such a dry year would occasion.

But the greater gain to the State will be the better conception of the advantages of irrigation which must be engendered. It is already claimed that some regions which have resisted irrigation enterprises are not now so sure that they were right in their resolute antagonism. Unquestionably it is well to ascertain as early as possible the defects of any plan under which one is proceeding, and if the theory of the Wright law is unsound and unjust it is well to know it, but this should not act as an estoppel upon local irrigation enterprises in California. The demonstration of correct procedure should rather stimulate wiser and sounder activity in irrigation lines, and the sad experience of this summer should incite general thought and discussion as to principles and methods which should be promoted to the end that California should be better prepared for a dry year and better prepared also to have bet-



OLIVE KNOT AS SHOWN ON LEAVES AND SMALL BRANCHES.



KNOTS FORMING ON EDGE OF A WOUND AND AT NATURAL ENLARGEMENTS OF THE STEM.

(See page 244.)

forewarning which is equivalent to forearming. The suggestions concerning the prevention of spread of the disease should be universally heeded.

As one reads of this knot of the olive and perceives how fully its actual cause is demonstrated, thought at once rises in the mind of the very different fact in the case of the crown-knot or root-knot which has for so many years ruined fruit trees and vines, and has still baffled investigation into the specific cause of the abnormal growth. There is indirect or circumstantial evidence of the work of a parasitic organism, for treatment with germicides has checked the disease, and possibly some more successful investigator may demonstrate the existence of a minute intruder of the bacterial sort. The contrast, however, between the obscurity of this trouble which has been well known to be serious for twenty years and the demonstration of the character of the olive-knot at its very first appearance, shows how patient investigation is sometimes fruitless and at other times speedily rewarded with discovery.

The illustrations of the olive-knot on this page,

ing promptly. We shall be glad to hear from RURAL readers who may detect the disease on their trees and to receive specimens of suspected material for examination.

Irrigation Progress.

The character of the year will minister to a considerable extension of irrigation interests both in a broad way, by begetting a better appreciation of irrigation benefits, and in narrower lines by stimulating investments in irrigation facilities both co-operative and individual. For the last few weeks there has been the greatest activity in all promising lines of water development. Well digging, pump building, dam and reservoir construction (on a small scale) have all been pushed wherever means and enterprise co-existed in individuals or communities. No doubt the ills of this dry year will be considerably lessened by what is being done for artificial water supply, and wind, electricity, gasoline and petroleum will all be employed to a greater extent than ever before in the pleasant task of under-writ-

ter and more profitable summer growth in years of ordinary rainfall.

It is none too soon now to take this matter in hand for the next meeting of the Legislature. It may be that, as in the past, irrigation interest stimulated by a year of drouth is washed away by the heavy rains of the following legislative winter, but probably irrigation doctrine may be more desirable now than it has been in the past. Undoubtedly the subject is much better understood and the advantage of commanding a water supply is better appreciated. Then, too, the legal aspects of water rights and enterprise are clearer, and irrigation propaganda is more likely to sink deeply into the public mind.

We commend the irrigation subject to all our agricultural organizations. Let them discuss all branches of it—both local and general, legal and financial—and determine what can be done in a legislative way to ensure the use of water for the greatest good to the greatest number. Our columns are open for such discussions.

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ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, April 16, 1898.

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The Week.

A hot wave has been rolling over California this week and that it has done some damage is undeniable. Grain fields have suffered, especially those in elevated situations, but it has caused a more rapid growth of all crops where there was any moisture, and has, on the whole, been a help to fruit. In all irrigated regions the heat has been welcome; but to many up-land farms it has ended all hope for a season's crop. Of course, a good rain would save many fields now practically given up as lost, and where there is time there may always be hope.

The week has witnessed extraordinary activity in the improvisation of irrigating facilities. Wherever the ground will yield water, wells are being sunk and pumps set up and the amount of land thus hastily brought under irrigation will be very great.

The following data for the week ending 5 A. M., Wednesday, April 13, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Year to Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---------------------------------------|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | .80 | 31.07 | 47.66 | 40.39 | 38 | 68 |
| Red Bluff..... | T | 12.30 | 23.88 | 23.98 | 44 | 92 |
| Sacramento..... | .04 | 8.77 | 17.15 | 18.47 | 40 | 88 |
| San Francisco..... | .00 | 7.75 | 22.56 | 21.35 | 46 | 87 |
| Fresno..... | .00 | 4.01 | 10.52 | 8.92 | 40 | 94 |
| San Luis Obispo..... | T | 6.05 | 20.71 | * | 42 | 94 |
| Los Angeles..... | .00 | 5.26 | 16.74 | 16.03 | 48 | 92 |
| San Diego..... | .08 | 4.18 | 11.66 | 9.85 | 46 | 74 |
| Yuma..... | T | 1.65 | 5.35 | 2.97 | 50 | 94 |

* No record.

The Produce Markets.

The wheat market has gotten on a purely local basis, due to the unusual weather conditions, and it is fully 10 cents per hundred in advance of what exporters can afford to pay. The business doing is wholly in milling grades and the market is fairly active. There is some alarming talk about a deficiency in the consumptive supply of wheat this coming season; but those best qualified to judge declare this to be absurd. In any event, we are likely to have some surplus, and probably it will be very respectable in amount. During the week two well-known wheat dealers—Erlinger and McLaughlin—have failed, due to "short" sales made earlier in the season.

All sorts of feedstuffs, especially barley and hay, are booming in price. As to hay, there seems no good reason for it, since it is believed that first quality hay can be laid down here from Oregon or Nevada for lower prices than those now current in this market. Consumers are resorting to unusual economies, and drawing largely on straw and cheap grades of fodder, and the consumptive demand is likely to be much less than usual.

Apricots easily hold the advance made ten days ago, and reported in our last issue; but there is no

change in other fruit lines, which may be taken to indicate that the "trade" has no fear but that supplies will be sufficient this coming season, the unusual dry conditions notwithstanding. The clean-up in fruit is fairly good in all lines except raisins and prunes. There are probably not more than 100 carloads of desirable raisins on hand, although the stock of rain-damaged goods is still large. Of prunes there may be still 200 carloads in the State, and the movement is sufficient to carry them all off before a new crop comes in. Of peaches there are perhaps 100 cars and of apricots 50 cars.

Beef is quiet. Mutton is weak, due to large offerings on the part of flock owners whose supply of food is short. Hogs are in unreasonably large supply for the same reason, and are, of course, weak. Butter is firm, especially for packing grades. Young poultry is firm.

For detailed market information, see our regular market report.

Weather and Crops.

SUMMARY OF THE REPORT OF THE U. S. WEATHER SERVICE FOR THE WEEK ENDING APRIL 11, 1898.

Like the previous week, the one ended failed to bring the much needed rain to the great grain producing sections of this State. In the extreme north coast counties the rainfall was nearly 1½ inches above the normal, but elsewhere there was a marked deficiency. As the seasonal rainfall has been unusually scant, the absence of these later rains, combined with the want of adequate winter rains, produces a very unfavorable outlook for crops.

The temperature has been about normal in all sections, except the San Joaquin valley, where it has been slightly above.

Grain has suffered severely by the dry weather. Wherever practicable, the land is being irrigated for the benefit of both grain and fruit. There are a few reports from canal districts which state that grain is doing well; many reports say that grain is damaged beyond recovery. Feed is scarce in the San Joaquin valley and south coast grazing sections, and much stock has been moved to prevent loss. Previous estimates of loss of apricots, almonds and early corn confirmed. A partial crop is expected in bay section counties. Prospects favorable for pears, prunes and apples.

General Summary.

SHASTA.—Light showers not sufficient to benefit. Grass drying up. Rain needed badly.

SACRAMENTO.—Crops holding their own. No north wind to amount to anything. Irrigation necessary to permit cultivating in many vineyards.

BUTTE.—Lemon and apple trees in bloom and occasional orange blossoms. Rain of 5th, though light, was made use of by harrowing ground already plowed.

TEHAMA.—Wheat looks well, but it is thought that unless rain soon comes crop will be light; fruit not injured as much as at first thought. Severe norther Monday.

GLENN.—North wind continues; prospects for crops very doubtful.

YOLO.—Heavy north winds at end of week. Grain and vegetation suffering for rain; irrigating orchards. Fair crop of pears and prunes anticipated.

SOLANO.—North winds. Grain suffering for rain. Prospects discouraging. Do not expect half the usual crop. Rain much needed.

SAN JOAQUIN.—Grain in rolling land is standing drought much better than on low or black lands. Heavy rains would insure crops in some localities; in others it is too late for rain to save grain.

MERCED.—Warm growing weather. Grain doing well. Need more rain.

STANISLAUS.—Winter-sown grain beyond help; rain may help summer fallow. Outlook still favorable for crops inside canal limits.

KERN.—Favorable weather for growing grain, which is in fine condition.

FRESNO.—All crops except budding grapes suffered from drought during the past week. Farmers irrigating; seeding finished this week. Grain doing well in canal districts.

KINGS.—Grain past redemption. No apricots; some peaches and plums; more prunes and an abundance of pears and apples.

TULARE.—Warmer; discouraging for grain; shearing on.

SONOMA.—Some rain helped grain and hay. Prunes not hurt so badly as reported. Farmers plowing orchards and vineyards and planting corn. Hay and grain look well. Prunes, pears and apples all right thus far.

NAPA.—Rain on 5th helped grain and grass very much. Farmers planting corn; ground works well. Pears and prunes promise good yield.

ALAMEDA.—Farmers think fruit crop will be small. Prospects for vegetables not very good so far.

LAKE.—Rain on 6th beneficial to all crops, but not enough to help vines and trees. Previous estimates of damage by frost correct. In some localities prunes have been damaged, though not in blossom. Rain needed.

SAN MATEO.—Crop outlook very poor; prunes will be a full crop, also cherries; other early fruit much damaged.

SANTA CRUZ.—Crops and feed in good shape, but will require rain soon.

SANTA CLARA.—Apricots not a total failure. In some places there will be one-tenth of a crop. Peaches not so badly injured; prunes little injured. Unless more rain, little hope of maturing fruit crop on land not irrigated. Every means of irrigating called into use. Grain on high lands beginning to suffer.

MONTEREY.—Crops falling fast. Need rain badly.

SAN BENITO.—Feed dried up and grain drying.

SAN LUIS OBISPO.—Grain and grass about done. Cattle shipped away for feed. Dairy interests in distress.

LOS ANGELES.—(Bassett)—Grain in bad shape. Some corn planted. (Duarte)—Cereal crops will not be worth cutting unless rain falls soon; deciduous fruits look well. (Los Angeles)—Fruit of all kinds looking well; cutting what hay there is. (Palmdale)—Very poor prospect for far grain or hay. (Pomona)—Crops suffering for rain. (San Fernando)—Dry north winds. Prospects for hay and grass very poor without more rain; deciduous fruits looking well.

VENTURA.—Withering, curled up blades of barley; show unmistakable signs of a failure, but on irrigated lands looks healthy. Stock being moved. Oranges and lemons doing well; hay and grain a certain failure.

ORANGE.—Fruit trees looking well; small grain suffering.

SAN BERNARDINO.—Continued dry weather. Unfavorable report from whole section as to outlook for grain. But little hay will be made.

RIVERSIDE.—Dry and warmer. Deciduous fruit all killed. Grain and hay crop short; outlook for oranges good.

SAN DIEGO.—No rain and all hope for hay and grain gone; very poor prospect for apricots, but good for peaches and prunes.

LOS ANGELES SUMMARY.—Grain and hay failure, on account of continued dry weather, except on irrigated land. Oranges blossoming freely; fair prospect for deciduous fruits in most places except apricots and early varieties.

EUREKA SUMMARY.—Copious warm rains have overcome bad effects of previous frosts and cold north winds on grain and grass; fruit advancing; vegetables just beginning growth. Crop prospects good.

Fruit Growers' Conventions in Southern California.

THE SESSIONS IN LOS ANGELES.

[EDITORIAL CORRESPONDENCE]

LOS ANGELES, April 12, 1898.

It is welcome assurance that California fruit growers are not wholly cast down by the vicissitudes of this dry and frosty year to know that about 150 growers from different parts of the State assembled here yesterday, at the invitation of the State Board of Horticulture, to consult upon the interests of their industry. Fruit regions were represented which are widely distant from each other. The progressive district of Marysville and Yuba City on the north, the important shipping region of the foothills of Placer county, the fruit valleys of the San Francisco bay district, the raisin realm of the San Joaquin centering at Fresno—all these, and probably others of the central and northern parts of the State, were represented by prominent growers, while all the counties of southern California send large delegations.

The environment of the meetings is very appropriate and elegant in its appointments. The Chamber of Commerce of Los Angeles deserves its place as the leading exposition agency of California industries. It has a grand building with large exhibition floors and galleries and audience halls and committee rooms of good dimensions and fittings. Its display of productions is rich and varied and calculated to most favorably impress inquiring visitors. The institution is an exponent of the appreciative enterprise of southern California, and the San Franciscan can but gloomily contrast the support which the scores of northern and central counties give to the State Board of Trade of San Francisco with the zeal and liberality of the little group of southern counties, as shown by the resources of the Los Angeles Chamber of Commerce. While the institution so excellently administered by Mr. Filcher is obliged to tack about the city in a succession of temporary quarters, the similarly excellent work of Mr. Wiggin is installed in a spacious and permanent building, which this week is serving as the focus into which can be gathered all the fruit interests of the State. To draw this hint for the awakening of the upper-part of the State to its own advantage is irresistible, as the gathering here brings the contrast so sharply to the mind of the writer.

The convention assembled promptly on Monday morning and a two days' programme with three sessions for each day was vigorously entered upon. Gen. Charles Forman, president of the Chamber of Commerce, delivered an address of welcome to President Ellwood Cooper and his associates in the the convention from all parts of the State. After he finished with the cordialities, Gen. Forman touched upon the question of transportation—the most vital question that would come up for consideration before the convention. To the mind of Gen. Forman, the construction of the Nicaragua canal was the key to the entire difficulty. With that waterway open, fruit could be forwarded to New Orleans in eight days, and to Liverpool or Havre in fourteen days, the countries of Europe thus being thrown open as a market.

Another welcoming speaker was Hon. Abbot Kinney, president of the Southern California Pomological Society. After a few pleasant words, Mr. Kinney passed into his habitual state of mind, which contemplates the wrongs under which the individual is oppressed by corporate strength and interests. However Mr. Kinney may enjoy the present moment he never forgets that in reform rests the hope of the future. We are not surprised, therefore, to hear him pointing out that there are three essentials presenting themselves for consideration to men engaging in the fruit business. (1) Production: the kind of fruit, its treatment and the locality suitable for growth. (2) The cost from the producer to the consumer, and (3) the question of distribution. While the first two points had been dealt with satisfactorily, the last is yet an unsolved problem. Mr. Kinney held that the special rates accorded to certain firms, and the rebates given over certain routes are the special privileges which strike at the root of the entire difficulty. Those firms getting such rebates are bound to control the fruit business just as surely as the Standard Oil Company controls the oil supply. He contended that the only way to deal with the matter is along the political line, by giving more power to the Interstate Commerce Commissioners.

The selection of Hon. William Johnston of Sacra-

mento county to respond to the address of welcome was a very wise act on the part of the management. He is a master of the art of saying nice things at the right time, and his response on the part of the visiting fruit growers was very cordial. The Senator could not, however, forget his lessons in statesmanship and patriotism and the fruit growers were not at all frightened when he declared that the great crisis upon the country was not only one of frost and rain. "The question is even now being argued before a jury," said Mr. Johnston, "whether we are a humane people. I want to say that the integrity and humanity of the American nation can and will be preserved." [Applause.]

The first formal act of the convention was the semi-annual address of President Ellwood Cooper. Mr. Cooper followed lines which he has been for a long time most earnestly impressing upon the fruit growers as of the highest significance to their prosperity—the Nicaragua canal, the enactment of an effective pure food law and the adequate display of California fruit products in the eyes of the world. He also urged the awakening of wider interest in irrigation enterprises. Turning from these wide propositions, Mr. Cooper made reference to the work of the State Board of Horticulture, which is increasing so rapidly that the quarantine officer needed two assistants. During the past two years 91,390 plants, fruits and packages had been examined, many destroyed and the others fumigated. Mr. Barlow has now a bill pending in Congress which will decrease the work of the quarantine officers, but increase very materially the danger to the fruit growers. By its terms the consignment may be inspected abroad, and mayhap by an incompetent official, and yet they will not be open to challenge upon arrival here, and so fungoid diseases may be introduced, despite all that can be done. The convention manifested a desire to express itself upon this matter later in the sessions.

Mr. Edward Berwick of Monterey was ready to take up the interests of the Nicaragua canal, which had been mooted by previous speakers, and he made a most forcible address in favor of the enterprise, urging arguments both new and old and pointing them sharply in the style of which he is master. Although his general argument was strong, it is probable that those rather new facts which he cited gave his claims particular force with the fruit growers. He pointed out how it was an absolute necessity for California that the Nicaragua canal should be built, and that not only had the Argentine Republic met this State as a competitor in growing wheat, but is preparing to do the same with fruit. A bounty is being given on two-year old fruit trees, and as a consequence an immigration of Spaniards, Italians and Frenchmen from southern France almost as large as the population of California has settled in the Argentine Republic, and are developing the industry to which they are thoroughly accustomed. When the time arrives for marketing these fruits, without the Nicaragua canal California will find herself 10,000 miles behind the Argentine Republic in distance from the markets.

The interests of co operative marketing in the form of the Exchanges were advocated by A. H. Naftzger, president of the Southern California Fruit Exchange, on "The Distribution of Citrus Fruits." Mr. Naftzger reviewed briefly the history of the original two navel trees planted in Riverside from which the shipment has grown up to the present year to 12,000 carloads. Riverside has 17,000 acres planted to oranges, to which 50,000 more acres may be added in other counties. The problem now confronts the grower, how this increasing yield can be marketed. Florida and Arizona will add to the product of our own State in the market and the increased fruit of other States must not be lost sight of. The demand for fruit must be increased; goods must be sent to market in more attractive form; unripe fruit must not be rushed in to market for the holiday trade; frozen oranges must not be sold and lower freight rates must be secured. All of which can be secured by associations and co-operation. "If you want a market for your citrus fruit," said the speaker, in summing up his argument, "organize, systematize and co-operate."

The proposition for co-operative action among growers of deciduous fruits was presented later in the convention by Prof. A. R. Sprague to which reference will be made at another time.

The sulphuring of dried fruits excited the usual interest and controversy. Mr. A. P. Griffith of Azusa led with an essay on the natural style of drying and A. R. Sprague spoke of the abuses of sulphuring. On the other side were Messrs. Stabler of Yuba City, Boyd of Riverside and others. Mr. Boyd defended sulphur for its own sake, but other speakers took the usual ground that they would like to escape the cost and trouble of sulphuring, but that it is simply impossible to sell dark-colored fruit at a paying price.

Canneries from canners' and growers' points of view were discussed by Messrs. Welch and Deupree. The chief interest in the discussion was the fact that peach and apricot growers in the upper part of the State sell their fruit at much better prices than the

southern growers can obtain. Mr. Welch maintained that it was because the northern growers grew fruit which better suited canners' needs, and that southern growers were learning to do better in this direction and would reap a benefit.

The evening session was largely given to the olive question. Mr. B. M. Lelong read an essay on the general subject and followed by a computation as to the olive area and product of the State, which will be read with interest. According to the assessor's reports to the State Board of Equalization for 1897, which are conceded to be generally too low to be strictly accurate, there are in the State 1,162,739 olive trees, of which number 364,810 are given as bearing and 797,929 as not yet in bearing. Averaging the plant at thirty feet apart, we have 7600 acres in bearing and 16,623 acres not yet in bearing, or a total of 24,223 acres devoted to the culture of the olive in the State. We could with safety, perhaps, add at least ten per cent and would be nearer the mark.

Olive trees reach full bearing at fifteen years, and presuming they bear fifty pounds of olives per tree (which is not too high, but a low, conservative estimate), and that of the total number in bearing there are 3000 acres which will give this average, or 7,200,000 pounds. Again, averaging the product of the remaining 4600 acres, which are in bearing but have not yet reached the fifteen-year mark, at twenty-five pounds per tree, we have 5,500,000 pounds of fruit, which, added to the former, gives us a total of 12,720,000 pounds of olives as the product of the State. Now, on the average it takes sixty pounds of fruit to make one gallon of olive oil, therefore we should now produce 212,000 gallons of olive oil per year, if all the fruit was turned into oil, which of course would increase from year to year as the trees grow older, and when the acreage now given as not yet in bearing becomes in full bearing, averaging the output on the same basis as the above, or say 6000 acres in full bearing, at fifty pounds per tree we would have 14,400,000 pounds of fruit, and the remaining 10,623 acres at twenty-five pounds per tree would give 12,747,600 pounds of fruit, or a grand total of 39,867,600 pounds of olives per year; and if all were made into oil we would have 664,460 gallons of oil as the product of the State. Again, assuming that one-half of this output is turned into what is commonly styled "pickles," a misnomer for cured fruit, averaged at six pounds per gallon, we would have 3,322,300 gallons of cured olives and 332,230 gallons of olive oil as the product of the State.

All the above and more was done on the first day of the convention, so the reader can see that the sessions were well filled. Later issues of the RURAL will continue the reports of the week's work and papers of the widest practical interest will be given in detail, as is the RURAL's time-honored custom.

W.

AGRICULTURAL REVIEW.

CALIFORNIA.

Kings.

GOOD FRUIT IN THE TREE TOPS.—Jesse Brown, one of the pioneer fruit growers of the county, expects to have quite a little crop of peaches on his orchard. At first he thought the fruit was all killed by frost, but a few days ago one of his sons went out with a stepladder and found a good many healthy 'cots on the tops of the trees—whole twigs full of them in some places. He reports the same as all fruit growers have that we have talked with—that the frost was the worst nearer the ground.—Lemoore Leader.

Los Angeles.

FROST DAMAGE LIGHT.—Mr. Waters, manager of the Pomona cannery, after a tour of the deciduous groves from Redlands to Whittier, declares that on the average apricots are 50 per cent of a full set, peaches 80 per cent and prunes practically full. Plums are badly hurt. This is the condition with reference to the frost damage. Another element is yet to contend with, however. The drought will in many places seriously affect the fruit. In orchards without irrigation the fruit will probably not fully develop unless severely thinned. Where irrigation is not available the fruit should be thinned to a light crop in order to develop it fully. Commenting on this statement the Chino Champion says: "Mr. Waters may be right in his estimate of the percentage of good apricots and peaches, but from personal examination and other reports we are inclined to think that his interest as a buyer may have warped his judgment. We do not believe that in the territory named the prunes will be practically full, nor that peaches are 80 per cent full."

THE FRUIT OUTLOOK.—It happens nearly every year when there is a frost in the spring that the report goes out that the deciduous fruit crops are destroyed: later developments nearly always demonstrate that the frost has done only what many orchardists neglect to do, viz., thinned the fruit. That is about what it has done in this valley this year. While in some orchards nearly all the crop was killed by the late frosts, in others a good fruitage is showing on the trees. Fruit growers say that it is now apparent in all parts of the valley that there were lots of little 'cots on the trees that the frost missed. In the aggregate there will be half a crop of apricots this year and the quality will likely be unusually fine by reason of the vigorous thinning done by Jack Frost.—Pomona Progress.

Monterey.

IRRIGATION PROJECTS IN SALINAS VALLEY.—Irrigation of Salinas valley lands is not confined to the King City, Soledad and Soberanes ranch districts. Last Saturday O. H. Willoughby went to the Spence ranch, near Chualar, to place an 8-inch centrifugal pump, which is to draw water from the Salinas river to irrigate lands which Mr. Willoughby is farming. Near Blanco, James Bardin is putting in a 10-inch centrifugal pump and 1000 feet of 14-inch pipe, and will irrigate his potato and barley fields. John G. Armstrong is putting in a strong pump, with 250 feet of 14-inch pipe, and has a 20 H. P. gasoline engine to do the pumping. The Salinas valley is going to be given over to irrigation more and more each year,

and soon dry seasons will bring but small loss to the farmers of that great valley.—Pajaronian.

Orange.

SUGAR BEETS ON IRRIGATED LAND.—Mr. W. H. Holabird, well known as an expert on sugar beet practice, has been giving the farmers at Santa Ana some points on beet growing in connection with irrigation: "The land should be saturated with water, then deeply plowed, or if previously plowed, use a disc harrow, then a smoother; follow with the seed drill quickly while the surface moisture remains. In three to five days the plants will be well up and the little rootlets will have penetrated 6 to 8 inches. As quick as the rows show plainly use the cultivator, using the regular beet cultivator. By frequent cultivation, a dry mulch is kept on the surface and the moisture is conserved to far greater degree than if the ground is kept baked or lumpy. By constant cultivation the need of a second irrigation is questioned, the indications showing that you must irrigate the growing beets are that the leaves wilting in the hot sun do not recuperate at night. As long as they do stiffen up and show vigor in the early morning, keep off the water."

Sacramento.

EFFECTS OF FROST.—With special reference to the effects of the late frosts, Mr. Hechtman, of Porter Bros., makes the following statement through the Sacramento Bee:

"Around Vacaville, where it was estimated there would be a total loss, there will be about two-thirds of a crop.

"In Placer county there will be the best crop since 1893, and that county will this year ship between 1250 and 1500 cars.

"In Santa Clara valley some of the black varieties of cherries have been badly injured, but Royal Annes and later varieties have sustained virtually no damage. The pear and prune crop has not sustained over 5 per cent of damage, and apricots and peaches should make half a crop.

"In the San Joaquin valley the damage in some localities has been very severe. Apricots and peaches around Bakersfield are an almost total loss. There will be a fair crop of pears and prunes.

"In the section around Visalia there will be a very light crop of peaches, apricots and Tragedy prunes. Of French prunes there will be a fair crop.

"There will be no prunes in the Armonas and Hanford section, but there will be some peaches, a few Tragedys, and a fair crop of pears and French prunes.

"In the Sacramento river section there will be no apricots, peaches, cherries, Japan plums or Buerre Hardy pears. There will be a few Tragedy prunes, some Bartlett pears, some Washington and egg plums, and some German prunes.

"In the Amerinan river section there will be some cherries apricots, peaches and prunes. Some orchards in this section show up well, others have been badly damaged.

"Around Davisville and Woodland there will be no almonds, apricots or peaches.

"Suisun seems to have suffered less than any other section of the State, and will have some almonds, apricots and peaches, and a good crop of pears and plums.

"In Contra Costa county almonds, apricots and peaches are almost a total loss. Of plums there will be half a crop.

"Around Anderson and Red Bluff, apricots and peaches will be very scarce. Of pears and plums there will be a fair crop.

In concluding, Mr. Hechtman said it was estimated that the season's output of green fruit would be about 4000 cars.

"While this will not come up to last year's total," he said, "still the higher prices which will be obtained for the product will more than make up the deficiency."

San Benito.

THE CROP OUTLOOK.—Reviewing the general situation with respect to frost and drought in San Benito county, the Hollister Advance says: "In the matter of hay and grain, except in some specially favored sections, torrents of rain would not produce a crop. In the San Juan valley there will be scattering crops of barley. In the Fairview and Lone Tree districts there will be some hay raised. In the San Felipe country, where the land is subject to irrigation, there will be abundant crops of alfalfa hay and sufficient feed to keep the dairies running. Upon the rangelos feed is a scarce article. All the cattle which could be moved have been transferred to the north and to the alfalfa fields of the San Joaquin. Great numbers of stock have been sold at 'dry year' prices. While the orchardists claim to have been practically ruined by the frost, there will still be plenty of fruit. The apricots and almonds are about gone, and some early cherries have been nipped. There will be an abundance of apples, pears, prunes, late cherries and peaches. Fortunately for the orchards in this vicinity, they received the benefits of irrigation of the San Benito river, and there will be no loss of trees by reason of drought. Dairymen of this vicinity will meet with great loss by reason of drought. Scarcity of water has prevented them from irrigating their fields, consequently the feed will run short early."

Santa Barbara.

ONE of the stipulations relative to the building of the sugar factory at Oxnard was that the farmers in that vicinity shall plant 10,000 acres in beets, the sugar company furnishing the seed for \$2 per acre. The seed has arrived and the farmers have been notified to call for same; but, in view of the dry season, they are not over-anxious to have the seed, but the contracts are signed and they must take it. Owing to lack of moisture, the outcome is very dubious, but, as the Oxnards are not taking any chances in the matter, they will see that the farmers dig up \$20,000 for the seed, whether they want to plant it or not.—Summerland Advance-Courier.

COMMENTING on the scarcity of feed in Santa Barbara county, the Lompoc Record says: "Feed must be supplied from Bakersfield or Arizona, from which places first quality of alfalfa hay can be procured at about \$15 per ton delivered. There will be a much less demand for hay than heretofore, as thousands of horses and cattle heretofore fed have been killed or driven from the country. On our way to the county seat Sunday last we noticed vast herds of cattle at Elwood awaiting transportation to Arizona."

Santa Cruz.

PAJARO VALLEY FRUIT NOTES.—The appearance of orchards shows that spraying has been more generally followed this spring than ever before. It is not safe to depend entirely on parasites to clean out orchard pests. Efficacious sprays will be found a valuable aid. * * * Now is the time to fight codlin moth. This is the time when the codlin begins its season's campaign—and it is the time to fight him. Apples which have been tunneled by the codlin moth are not going to find markets this year, but clean fruit will find ready sale. * * * The heavy frosts which have visited this State during spring months for several years have conclusively shown that large sections of land have been given over to orchards which should not have been removed from grain farming classification. The sections of certain spring frosts are not and will not be profitable for oranges or stone fruits; and the sooner such lands are returned to their original use the quicker will profits therefrom flow to their owners. California is a fruit growing State, but every acre of land in the State will not produce fruit.—Pajaronian.

Tulare.

C. B. Simmons of Visalia, informs the Porterville Enterprise that "the best grain to be seen is around Exeter, Lindsay and Frazier valley, and with more rain a fair crop will be realized. Around Deer Creek and Terrabella the outlook is gloomy and a good deal of rain will be required to make any kind of a crop."

HORTICULTURE.

The Olive Knot.

By FREDERIC T. BIOLETTI, Bacteriologist of the Agricultural Department of the University of California, In Bulletin No. 130 of the Experiment Station.

The olive knot is a serious disease of the olive tree, from which, until lately, California seems to have been exempt. Its recent discovery in Merced county, however, makes it necessary that those interested in olive growing should be made fully acquainted with all that is known of a practical nature regarding the disease, in order that its spread shall be restricted as much as possible. It is quite possible—indeed probable—that the disease exists in a mild form in other districts, where it is prevented by the local conditions from increasing to a noticeable extent or doing any appreciable damage. There is danger, however, if such districts exist that they will serve as centers of infection, from which the disease will spread to other districts, where a different set of conditions will allow it to assume a more virulent and destructive form. As no satisfactory curative measures are known for a tree once badly attacked, it is important that strict quarantine measures should be taken. This is especially true in the case of infected nurseries or of olive groves from which buds or cuttings are taken for propagation.

Name of the Disease.—The disease which is designated here as "olive knot" is known in Europe under many names, among the commonest of which are "rogna" in Italy and "gale" in France—both words about equivalent to the English "mange." In scientific publications it is generally spoken of as "tuberculosis of the olive." This name, though very descriptive, is undesirable for the reason that, to some people, it carries with it the idea of a connection between this disease of the olive and the tuberculosis of animals and man. Both diseases are caused by bacteria, but so is the production of vinegar. There is no other connection between the two, and no possibility of one producing the other. To avoid giving a wrong impression, then, it seems best to adopt the equally appropriate and descriptive name of olive knot.

Distribution.—The olive knot occurs in all parts of Italy, in Egypt, in southern France and probably in all parts of the olive-growing region bordering on the Mediterranean. As a rule, the disease is worst in the most southerly districts, and especially in those where the orchards are most thoroughly cultivated. The distribution is, to a great extent, sporadic, both as regards the whole Mediterranean region and as to particular localities. Some of the most seriously affected districts are widely separated, and in the same locality badly diseased orchards lie side by side with orchards that are almost free. Occasionally, only a few trees in an orchard are affected, and the disease remains for a long time confined to them without showing any tendency to spread. That it does spread, however, from a center to surrounding trees and localities, like other infectious diseases, is undoubtedly true in most cases.

Historical.—Although this disease is said to have been known to the Romans, and to have been described by both Theophrastus and Pliny, it was not until about the middle of this century that it attracted any considerable attention. So long as only the hardier varieties were grown, and intensive cultivation of the olive had not been adopted, the disease was limited in range and comparatively harmless. As soon, however, as the finer and more delicate varieties of olives were planted, and olive orchards were subjected to modern methods of cultivation, irrigation and manuring, the conditions most favorable to the disease were established, and the damage occasioned by the "tuberculosis of the olive" became serious.

The strong resemblance of the olive knots to the galls produced by insects on many plants led most of the earlier observers to believe that they, too, were caused by insects. The mistake was the more easily made as the galls are often found pierced by insects, which have used them for food or shelter.

Occurrence of the Disease in California.—Olive knot was first noticed in California in an orchard near the town of Merced. Mr. A. R. Gurr first observed it in 1893 on a single tree. Since then it has been gradually spreading, until now it has destroyed several trees and has spread over a large part of the orchard.

A visit was made to Mr. Gurr's place in February, 1898, with the object of investigating the disease on the spot.

The orchard is on a rich sandy soil near an irrigating canal and is thoroughly sub-irrigated. The water level is said to be, on the average, about 5 feet from the surface. The trees grow very vigorously and bear well. They were not pruned much until attacked by the disease, when pretty severe cutting back was resorted to with the idea of removing the diseased parts. The affected trees immediately surround those first attacked, while the part of the orchard farthest removed from the point of in-

fection is yet free from the disease. The following plan of the affected orchard (Fig. 2), drawn from data furnished by Mr. Gurr, shows graphically how the disease has spread from the tree first attacked (A) to the surrounding trees.

Some large trees were found to be literally covered with knots. They occurred on the main trunk, branches and twigs, and were particularly abundant wherever the tree had been cut or otherwise injured. These trees showed the effect of the disease in limited growth, scanty foliage and occasional dead branches, and were evidently on the point of succumbing. Other large trees, which had not been affected long, showed immense numbers of knots on the small twigs, but very few on the trunk and branches. These trees looked as vigorous and healthy as the unaffected trees and had borne a large crop. Finally, on the edges of the affected area the trees showed only a few knots, which in nearly all cases were on the small twigs.

There was little evidence on which to base a judgment as to the various degrees of susceptibility of the various varieties grown here. The Columbella seemed to be particularly susceptible, most of the dead trees being of that variety, but this may be due

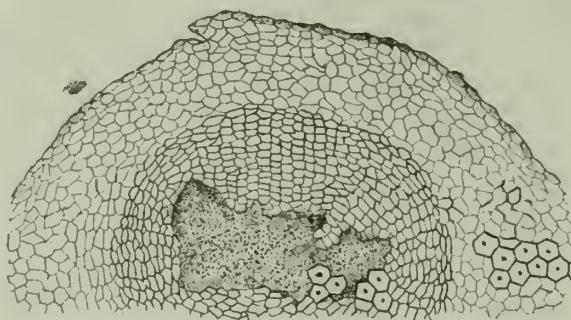


Fig. 1.

Section through a young knot, showing "cellulose-like" hypertrophied tissue and the central hollow containing the colony of bacteria. Below is shown the microscopic appearance of the *Bacillus oleae*.

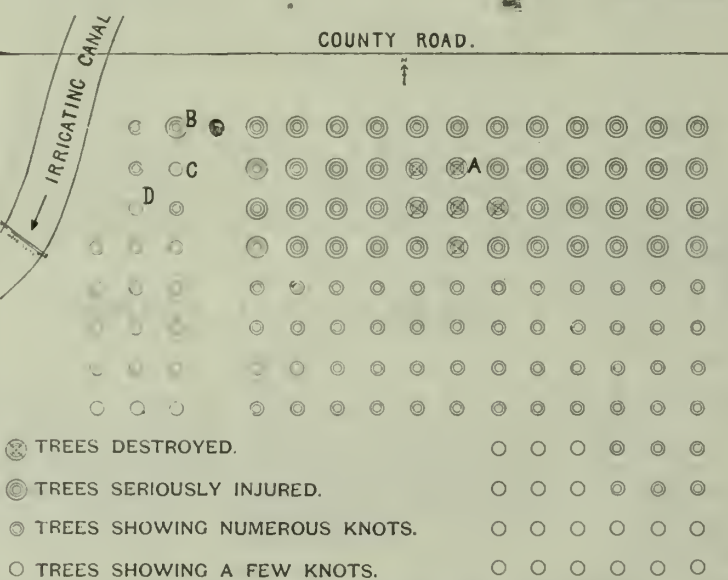


FIG. 2.—PLAN OF THE AFFECTED ORCHARD.

A.—The first tree on which the knots were noticed. B.—Tree showing an immense number of knots. C.—Mission olive almost free from knots. D.—Redding Picholine almost free from knots.

simply to the fact that they happened to be in the area first attacked. The Mission and Redding Picholine seemed to be comparatively resistant, as far as could be judged from a single tree of each variety growing next to badly diseased trees on the edge of the affected area (see C, D, Fig. 2). In general, the old trees were attacked principally on the younger parts. Correlated with this is the fact that young trees were evidently more susceptible than old and suffered more injury from the attack. Young trees planted to replace trees destroyed by the disease were in all cases literally covered with tubercles, and in some cases killed. The tree represented in the figure had over ninety knots.

Wherever a jagged wound, such as that made by tearing off a branch, or by a blow from the plow, was seen, the tubercles were very numerous. The edge of such a wound is evidently an excellent place for infection. The smooth wounds made in pruning were much less severely or generally infected.

The roots seemed little affected. A small tree, which was a mass of tubercles above ground, showed only one about the size of a pea on the roots.

Occasionally, small tubercles, varying from the size of a pinhead to that of a pea, occurred on the leaves, generally on the under side. The occurrence of affected leaves was very irregular, most trees showing none. When they did occur they were generally confined to one or two small branches, and even then

were not numerous. It was only rarely that nearly all the leaves on a small branch exhibited tubercles. The number of knots on the leaves seemed to bear no relation to the severity of the attack on the rest of the tree. Some of the most badly affected trees showed no excrescences on the leaves.

What fruit remained on the trees was too badly frost-bitten for judging whether or not it had been invaded by the bacteria. Mr. Gurr said, however, that the olives on diseased trees seemed affected, and that an attempt to pickle them failed, as they decayed before they were ready for the brine.

Nature of the Disease.—Savastano describes the "tuberculosis of the olive" as follows: "The tubercles which characterize this disease are generally formed on branches of from one to fifteen years of age, where the bark is still smooth and not cracked. They are generally isolated, but sometimes take the miliary form. They are rare on the roots, and still more so on the leaves and fruit. So far I have not found them on the flowers, but believe they may occur there."

Savastano investigated the influence on this disease of cuts, bruises, pruning and other mechanical injuries to the plants, and came to the following conclusions:

1. Wounds do not cause tubercles except on plants which are already predisposed to the disease. 2. Even in these plants a wound does not always cause the formation of tubercles. 3. Heavy pruning causes the formation of new tubercles and an increase in size of the old on affected trees. 4. The formation of tubercles is in direct ratio to the vigor of the plant.

The manner in which the tree becomes infected with the disease is not known positively in all cases. Anything which wounds the bark, such as cuts, bruises, hail, frost, pruning, grafting, budding, etc., is often followed by a growth of tubercles, as it allows the entrance of bacteria. The disease occurs sometimes, however, in places where there has apparently been no mechanical injury to the tissues of the tree. It is quite possible that biting and sucking insects may, in piercing the bark, inoculate the tree with the disease. According to Vuillemin, a certain fungus is always found associated with the olive knot. This fungus, he claims, penetrates the tissues of the tree and opens the way for infection by the bacteria. That the disease is infectious, and is caused by bacteria, there seems to be no doubt.

Symptoms of the Disease.—A complete account of the effects of the disease on the trees cannot be given at present, as only one visit has been made to the affected orchard. At other seasons of the year other symptoms may be shown. The disease has no apparent effect on the general health of the tree until it becomes literally a mass of knots. It is but rarely that a branch or twig is killed while the rest of the tree remains healthy, and it is not until the last stage is reached that there is any diminution of vigor or fertility in the affected tree. The symptoms, therefore, may be said to be confined to the various kinds of excrescences which appear on the different parts of the tree, and a description of these will suffice to characterize the disease.

The knots on the leaves are always small, especially when they are numerous. They vary from the size of a pinhead to three-sixteenths of an inch in diameter.

They occur almost always upon the lower surface only, but show through on the upper surface as brown spots. This shows that the leaf tissue is killed quite through the leaf. On the leaf stalks the knots are generally larger.

On the small twigs of vigorous trees the knots often measure 1 inch across, and become much contorted and split up by drying out and the pressure caused by the continuous growth of new tissue within and at the base. However large a knot becomes, it seldom or never involves the whole circumference of a twig. On the side opposite the knot the bark seems healthy. This accounts for the fact that a tree remains green and fresh looking for so long a time after being severely attacked. Occasionally, especially on young and badly affected trees, several points of affection will coalesce. In this case the bark and growing layer of the twig may be killed all around. Still, more rarely the infection seems general on a certain part of the twig, and for an inch or more there will be a kind of breaking out, owing to a general hypertrophy of the tissues, not arising from any definite points of infection, and not producing definite knots. The last two cases account for the occasional dead twigs and small branches which occur. In some cases where there is a large number of points of infection, or when the tree is less vigorous, the knots remain small, not exceeding 1/2 inch in diameter. They are also more regular,

more nearly spherical, and do not develop so many cracks nor such an uneven surface.

On trunks and branches the knots finally attain a large size, often becoming as much as 2 inches in diameter. This seems to be a larger size than they attain in Europe, judging from descriptions. They are flatter, that is, more spreading and less spherical, than on the twigs. Occasionally several on many points of infection occur near together, and the resulting tubercles run together, thus forming a large mass of cracked, diseased tissue several inches across. This is very commonly the case in the infection of ragged wounds, where the points of infection are so numerous that no definite knots are formed. The knots occur very often on the old wood near the base of small twigs coming from adventitious buds. They occur, however, in all situations, and infection appears possible anywhere.

Some of the trees on Mr. Gurr's place which showed a very large amount of olive knot were very heavily loaded with fruit. Several of the older writers make the observation that trees attacked by this disease bear more than they did before. The reason of this is that plants with too much vegetative vigor do not bear well, and that the first attack of the disease by slightly diminishing this vigor makes the trees more fruitful. As the disease progresses, however, the diminution of vigor continues until the plant is unable to produce either fruit or foliage.

Knots Which Are Not This Disease.—There are several kinds of knots, or swellings, common on olive trees, which might carelessly be confused with the real olive knot. First of all, there is the common callus or healing tissue of wounds which forms around cuts, grafts, and inserted buds. This forms in a rather thin layer around the edge of the wound, is of different shape, and never reaches the size of the true olive knot. The large swellings—"uovoli"—commonly found on the trunk of the olive tree, especially near the ground, are also of a very different nature. They are perfectly normal and do not indicate a diseased condition. They are, indeed, used in Europe for the propagation of the olive. They seem, however, to be particularly favorable places for infection and for the growth of the true knot. Finally, old olive trees often develop tumors on the main roots, trunk, and larger branches, the cause of which is not well known. They are flatter, less cracked, and generally grow to a larger size than the tubercles of the olive knot. They do not seem to be infectious, nor do much harm to trees.

Conclusions.—The olive knot disease is at present limited to a small range in California, but, as it promises to be very harmful in some localities, special precautions should be taken to prevent its spread.

The one necessary condition for the existence of the disease is the presence of the specific germ, the special bacterium which causes it. If this can be kept away, no other condition will bring about the disease.

Even if the disease germ be present, the trees will not be attacked, or attacked only lightly, if the conditions favoring the growth of the germ do not exist.

The conditions favorable to the growth of the bacteria and to the production of knots are: (1) Delicacy of the tissues, owing to youth or variety; (2) high sap pressure, due to heavy pruning, irrigation, manuring; (3) wounds, caused by pruning, grafting, budding, gathering the fruit with rakes, and by injuries due to insects, fungi, wind, the plow, etc.; (4) hot weather. Under the conditions most favorable to the growth and spread of the disease, it may be contracted by any variety. Some varieties, however, are much more susceptible than others. Which varieties these are cannot be exactly stated as yet, at least for California. In general, however, those which are most "highly bred," that is, which are farthest removed from the hardy wild type, are most liable to contract the disease, and are most vitally injured by it. These, unfortunately, are precisely the varieties which are most valuable for the quantity and quality of their crops.

No buds nor cuttings should be taken from infected orchards. All pruning shears, saws, gathering boxes, etc., used on affected trees should be thoroughly disinfected before being used anywhere else. This can be done by boiling in water, or by steeping in a solution of one part of corrosive sublimate to five hundred of water, for one hour or longer.

Where there is danger of infection, all considerable wounds should be painted with an antiseptic and protective paint.

When a tree is first affected, all diseased parts should be carefully cut away and the parts burned on the spot.

What pruning is necessary should be done gradually, that is, a little each year. This is not so liable to produce a tendency to contract the disease as a heavy pruning every few years.

Where possible, the presence of too much moisture in the soil should be avoided.

Olive from diseased trees are perfectly wholesome, and probably as good for oil as from healthy trees, unless the vitality of the tree is seriously affected. If the fruit itself is attacked, it is probably useless for pickling.

THE SUGAR BEET.

Sugar Beet Industry of the United States.

California does not figure prominently in the latest publication by the Government for the reason, we suppose, that many of the preliminary propositions are practically settled for this State and attention is given to States newer in the interest. This fact, however, does not lessen California interest in what is being done elsewhere. The Secretary of Agriculture has just transmitted to the President for the information of Congress a very full report of the present condition of the sugar beet industry in this country, and of the operations of the Department during the past season in relation thereto. The document consists of two parts, the first being a report from the chemist of the Department, Dr. H. W. Wiley, in which the history of the industry is reviewed and given a full account of the season's operations.

Experimental Work.—The principal distribution of sugar-beet seed the past season was made through the agency of the agricultural experiment stations, the directors of many stations having been appointed special agents of the Department for carrying this method into effect. Seeds were also sent to about 10,000 farmers in different parts of the country, with full instructions for planting, cultivating, and sampling for analysis. These instructions were contained in Farmer's Bulletin No. 52, of which during the season nearly 150,000 copies were distributed. The samples for analysis were sent either to the agricultural experiment stations or to the Department of Agriculture. In all about 2300 samples were received for analysis at the Department of Agriculture.

The best results were reported from the States of New York and Michigan. Other States in which reports were favorable were Wisconsin, Ohio, Indiana, Minnesota, Nevada, South Dakota, Wyoming and Colorado. States giving fair results were Iowa, Nebraska, New Jersey and Pennsylvania. In general, it was found that after passing south of the mean isotherm of 71° F. for the three months of June, July and August, the results were poor. It is found that the belt of territory included between the limits of the isotherms of 71° and 69° may be regarded as the basic belt of the beet sugar industry. The best results are obtained within or north of this belt, other climatic conditions being favorable. Extreme northern limits of beet-sugar culture are determined only by the advent of freezing weather.

A comparison of analytical data with the thermal area shows a remarkable agreement. In States so situated that their northern portions are in the favorable thermal area, while their southern portions are without, comparison of the analyses of the beets grown in the southern, central and northern portions of these States, shows a regular gradation of excellence from south to north.

Irrigation May Go.—The conditions of growing beets under irrigation have been studied somewhat, but imperfectly. The data collected, however, are very reassuring, and lead to the evident belief that irrigated lands, under proper thermal conditions, will give most excellent returns with beets.

The report contains not only the analytical data obtained at the Department of Agriculture, arranged alphabetically by States and counties, but also of the data which have been obtained at the agricultural experiment stations during the year. In all instances the data obtained at the stations agreed very closely with those secured from the same States at the Department of Agriculture. These data from the experimental stations are collated and studied side by side with the data from the same States obtained from the Department of Agriculture, making a complete exposition of the results of investigations from all parts of the country. The collaboration thus secured between the States and the Department has afforded the best possible results in the studies undertaken.

Sugar Beet Seed.—Experiments were also conducted in the production of high-grade beets. Some of the high-grade seeds obtained at the station at Schuyler during the continuance of the work at that point were found to have sufficient vitality to continue their growth. Other high-grade seeds produced from specially analyzed beets were procured from European growers, and in collaboration with six of the experiment stations, comparative tests were made of these seeds in various localities. The stations collaborating in this work were Tennessee, Kentucky, Indiana, Iowa, Wisconsin and New York. The best results were obtained from the stations in Wisconsin and New York. The beets which were grown at the New York station were carefully selected for physical properties, and those which reached the standard of shape and size were subjected to individual analyses and preserved for the propagation of the seeds for the season of 1898. In all, 800 beets were found to have the requisite qualifications for the production of seed, and these have been preserved during the winter in a silo and are to be distributed this spring to the various stations for seed production. A few of them which have exhibited peculiar strains of excellence have been preserved for the production of a new variety

of beets, which is proposed to call the American Elite. These beets have an average weight of about thirty ounces and an average content of sugar of 19 per cent. The purity of juice in similar beets was found to be about 85. These beets, having shown these remarkable variations from the standard in size and sugar quality, are evidently fitted to produce a new variety of beets better suited to American farmers than the standard beets of Europe. It is the intention of the Department to endeavor to establish a variety of beets of this kind which shall have at least a third greater weight than the standard sugar beet of Europe without losing anything in sugar content or in purity of juice. The immense advantage of such a variety of beet for American growers is easily seen. The most successful scientific work in the future will come from placing the seeds in the hands of a few reliable persons in each locality and securing a careful supervision of their work by some accredited agent of a State experiment station or the Department of Agriculture.

The report contains a chapter on the value of the sugar beet and the beet pulp as cattle food, giving the chemical composition of each, the ratio between the nutrients, and its general value as a producer of milk and fat and as a sustaining ration.

Factories and Their Work.—The report closes with a chapter on statistics of sugar production in this country during the year 1897. During the season nine factories were in operation in the United States, namely, at Alameda, Los Alamitos, Watsonville and Chino, Cal.; Lehi, Utah; Eddy, N. Mex.; Grand Island and Norfolk, Nebr., and Rome, N. Y. Forty-one thousand two hundred and seventy-two acres of beets were harvested, with an aggregate weight of 389,685 tons, a yield of almost nine and a half tons per acre. This is less than the average in Europe, but with more scientific agriculture and judicious fertilization the yield in this country can doubtless be brought up to, if not above, the average of the best fields of Europe. The careful experiments of the New York Experiment Station, at Geneva, with beets grown in collaboration with the Department of Agriculture, resulted in an average yield of over sixteen tons of high-grade beets per acre.

Production.—The total amount of the beet sugar made in the United States during the year 1897 was 90,491,670 pounds, an average of 232 pounds per ton of 2000 pounds, or 11.6 per cent of the weight of the beets. This is a less percentage than is obtained in Germany, but considering the newness of the industry in this country, it is sufficiently encouraging. Reliable information shows that there will be in operation in the United States during 1898 seventeen factories, new factories being located in Utah (1), Oregon (1), California (4), Michigan (1) and New York (1). It is safe to say that at least 80,000 acres will be planted in beets during the season of 1898. The yield of beets may be expected to be nearly 180,000,000 pounds. These estimates should be reduced somewhat to represent the proper output of beet sugar in the United States; they are sufficient, however, to show the rapid growth of the industry, which will experience an enlargement of not less than 70 per cent during the coming season. The percentage of beet sugar produced in the United States during 1897 to the total consumption was only 21, but the prospects are that in 1898 it will be nearly 4 per cent of the total consumption, which now amounts to about 2,000,000 tons annually.

METEOROLOGICAL.

Frost and Almonds.

TO THE EDITOR:—You may remember my talk at the Farmers' Institute at West Palmdale last fall about the temperature our almond buds endured last spring. I have now a tested U. S. Weather Bureau thermometer and can state positively about it. The thermometer I used last season was not correct, but, making the required correction, the almond buds endured the following temperatures and gave us a good crop, viz., 26°, 27°, 25° and 25°. This year I made a careful test, but it was cut short, as the record below will show.

Dates of Blooming.—Owing, probably, to the dry winter, the almonds began to bloom very early—the earliest on record. A seedling almond grown on the place showed a fully open bloom on February 9th. A Harriott seedling bloomed February 10th. No Plus Ultras began to bloom February 15th; Drake's Seedling and King's Soft Shell began to bloom on February 22nd. Nonpareils began to bloom February 26th. March 1st the Royal apricots began to bloom; I X L almonds began to bloom March 2nd. On the 5th the Kelsey Japan plum began to bloom; on the 6th Red nectarines and early peaches began to bloom; White nectarines began to bloom March 8th. On the 11th of March Kelsey plums, nectarines and early peaches were in full bloom; almonds and apricots were nearly out of bloom and trees set full of fruit.

The Temperature Record.—From the 9th of February to March 11th there was no frost and the thermometer did not fall below 33°; but after this it ran as follows: March 11th, 29°; 14th, 28°; 16th, 29°;

17th, 25°; 18th, 29½°; 19th, 30°; 22nd, 26°. Examination of my orchard and all in this vicinity showed on the afternoon of the 22nd that it was harmed very little, if at all. The set fruit and blossoms were all bright and alive. About midnight the wind went down and it was very quiet till after sunrise. The thermometer went down to 20° and that ended the experiment for this year. As Sam Jones once said at the close of a lecture, "The monkey is dead and the show is closed." Excepting a few almonds on the east side of the top of some rolling hills, and 'cots in the tops of large trees, they are all dead. Hope to send you a better report next season.

OLIN L. LIVESSEY.

Fairmont, Los Angeles Co.

[Mr. Livesey's letter was not intended for publication, but the information is so accurately stated and of such wide horticultural interest that we take the liberty of publishing it. Fairmont is on the western rim of the Mohave country in the foothills at an elevation of 3300 feet above sea level. The region produces a splendid almond, and this year's temperatures are exceptional, as they are in other parts of the State.—ED.]

Cultivation and Frost Injury.

The effect of a newly worked soil surface upon frost-work on adjacent plants is a matter of some controversy. Mr. Alexander Gordon of Fresno tells of a case in his experience in which grape vines were badly frost-nipped just as far as the ground had been turned by the cultivator the day before, and where the ground was unstirred there was no injury. This observation seems to agree exactly with what J. S. Woodward tells the *Rural New Yorker*. He says:

I have noticed that when we had a frost it was always hardest on land recently cultivated or that was damp. By this I mean that on a field in which we were cultivating any crop during the day and until night, on that part of the field worked so late that the surface stayed moist, the frost was markedly heavier in the morning. With the same degree of temperature, more damage is done when the ground is damp, as, for instance, after a rain or during a wet spell. I always expect more damage from frost, with the same marking of the thermometer, in a wet than in a dry time. Also, more on sandy or loamy land than on that which is stony. We all know that evaporation takes up heat rapidly, and evaporation is more rapid from a damp than from a dry soil, and also from a soil free from stones than from one nearly covered with them. It is a popular notion that stones hold and absorb heat, and of course a large stone that goes down deep into the ground, being a good conductor of heat, will radiate more heat than the soil about it. But I think that the real reason why frost is less severe on stony ground is that so much of the surface is covered with stones that less evaporation takes place to absorb heat. I have no doubt that if the soil be stirred early enough so as to become thoroughly dry on the surface, it will have some effect in preventing damage by frost. There are some queer things about the action of frost. I remember once visiting a friend who had a lot of tin sap pails, and one night when it was cold and he feared a hard frost, he covered a lot of tomato plants and hills of melons; those covered were really killed worse than some left uncovered. Covering with the tin pails was actually a damage.

Retarding Trees by Root Pruning.

We gave account some time ago of the success in preventing too early starting of fruit buds by whitewashing and thus reflecting heat from a too fervid spring sun. Another method looking toward the same end is that recently tried by Henry E. Glazier, horticulturist at the Oklahoma station. He claims that by cutting the lateral roots in early fall he affects the operation of the conduit, stimulates bud action, and in consequence the sap water that passes up through the sap wood is checked to a certain degree. Another fact is that trees do not rest during the winter period as in a more frigid temperature. He cites the case of an apricot tree that was treated by root pruning. The laterals were cut on all sides of the tree by having a trench cut around the tree; as the roots extend farther from the tree on the south side of the tree than on the north side, care must be given in this. The tree must be approached nearer to the trunk on the north side to secure the roots. The ditch should be left open all winter to receive the storm waters, and filled by degrees in the spring. The ends that were cut heal over and all the early spring and summer throw out innumerable fibrous roots. The fruit buds will set on the terminal branches and as they do not contain as much sap water as trees not treated, will resist a greater degree of cold than trees containing a full supply of sap water. The leaf buds will be less numerous than trees not treated. The experiment further disclosed that the trees receiving treatment showed an increased growth within the year over trees not treated. The root-pruned tree developed a little more than three times as much fruit as the tree not

root pruned. The bloom was not retarded appreciably, more than about thirty hours, but blooms made their appearance on spurs near the trunk on the lower limbs from ten to twelve days later. The fruit that was retained on the trees not treated was invariably found on spurs on the lower limbs. The laterals were free from fruit, and the bloom was also conspicuous by absence on the laterals as well. The cost of root pruning can be made comparatively small, as the work can be largely done with the plow; to make the work complete some little work should be done with the spade at the angles. Mr. Glazier is not prepared to say just how long this treatment can be kept up with profit to the grower.

THE POULTRY YARD.

The Gape Disease of Poultry.

The gape disease of young poultry is the subject of a bulletin just issued by H. Garman, entomologist of the Kentucky Experiment Station. Young chickens are very much troubled in Kentucky with gapes. The disease occurs throughout the State, but is not uniform in its occurrence, being destructive on one farm, while farms adjoining are free from it. On the Experiment Farm at Lexington the disease rarely makes its appearance, while on a place just across a pike the majority of the chicks hatched are some seasons destroyed by it. It appears that once it becomes established on land it maintains itself there and thus renders it ill suited to the raising of chickens.

The immediate cause of the trouble is, of course, the presence of the well-known gape worm *Syngamus trachealis* in the trachea or windpipe. These worms obstruct the passage of air to and from the lungs, and thus occasion the characteristic gasping movements of the suffering chicks. The symptoms and general nature of the trouble are so well known that further reference to them may be dispensed with.

Common Remedies.—The commonly recommended practice of introducing into the trachea a partly stripped feather, or a bluegrass top, and by a twisting motion dislodging and removing the worms, does not seem to me, after considerable experience with the diseased fowls, to be practicable for very young chicks. The trachea is so small and so easily injured that it is impossible to dislodge and remove all of the worms by such means. With the greatest care it is only possible to give affected chicks more than temporary relief in this way.

It has been Mr. Garman's experience, however, that chicks generally recover without treatment when they are attacked after they are half grown, and hence fowls that might from their size be treated successfully with a feather do not require treatment of any sort. It is the very young chicks that suffer most, and the only remedial treatment in their case that seems to him to be successful is rubbing the neck from time to time with lard or vaseline thoroughly mixed with a little turpentine (three parts of the lard or vaseline to one part of turpentine). This treatment should begin before the disease makes its appearance. It will not help a chick in the last stages of the disease. Pure turpentine will very quickly kill a chick when rubbed on the neck over the trachea—a fact which Mr. Garman has several times demonstrated on badly affected individuals.

A valuable article on gapes and gape worms has been written by the French naturalist, Megnin. He asserts that the use of pounded garlic with the usual food has been made to completely eradicate the disease among pheasants in Europe. He recommends the use of one garlic bulb to ten pheasants each day, and the same proportion would in all probability be sufficient in the case of the common chicken. He supplements this treatment with special care in the matter of drinking water, using only pure water and changing it several times a day.

The Source of Gapes.—The current belief among naturalists is that the worms are in the soil and are picked up with food. No doubt this is true while the disease is present on a place, but Mr. Garman has known instances in which flocks were very badly affected on land where chickens had not been raised for years. How did these minute worms persist in soil that is each year dried and parched by the sun's heat? It is known that they cannot endure either heat or drouth. It is hardly probable that they migrate like earthworms down into the soil in summer and reappear again at the surface during fall and spring, when the surface soil is damp. It is a natural supposition that they may enter the bodies of insects, mollusks, or earthworms, like some other parasitic worms, and be received by poultry with such food. Yet Megnin asserts that they do not pass any stage of their existence in the bodies of any animals other than birds.

When the disease is under way among a brood of chicks it is beyond doubt conveyed by way of drinking water and food from affected fowls to others. Chicks suffering from gapes may sometimes be observed to dislodge worms and discharge them from their mouths during spells of sneezing. According to Megnin's observations, young hatched from the eggs in the bodies of these discharged worms may live for some time in the drinking water,

where they swim about like vinegar eels, ready to be taken into the stomachs of fowls.

These facts in the history of the worms show why dissolving copperas (sulphate of iron) in the drinking water, isolating affected fowls, and changing the quarters of the others, sometimes have the effect of checking the spread of the disease.

Chicks Reared on a Plank Floor Not Attacked by the Gape Worm.—Mr. Garman finds by experiment that it is possible to prevent the trouble completely on his place at Lexington by keeping chicks on a board floor from the time they are hatched until they are large enough to endure the attacks of the worms.

Chicks hatched by two hens June 5-7, 1897, were taken from the nests before they had an opportunity to get to the ground, and confined in two compartments of the same coop. One compartment was provided with a board floor; in the other the chicks were allowed the freedom of the ground.

The two lots were treated alike in every respect except in the matter of the floor and in the character of food. Those on the plank floor received the accustomed food given young chicks, namely, cornmeal mixed with water and scraps of bread, potato and meat from the table. After they had grown somewhat, a little oats was given them occasionally. The chicks on the ground received the same kind of food, except that they had in addition a daily ration of earthworms. All had gape worms in the trachea. During this time not a single chick of the seven kept on the plank floor became affected with the disease.

Conclusion.—The result of value to the farmer obtained from this preliminary experiment is that keeping chicks for several weeks after they hatch on a plank floor will prevent the gapes. It is Mr. Garman's present opinion that the same result would be obtained by simply elevating an earthen floor above the surrounding level so that it would not retain moisture. It must be remembered, though, that after the disease is established in a brood it will be conveyed from one to another through the medium of food and drink, and in such case a plank floor would not alone save it. In case the disease should be introduced by chicks which had contracted it elsewhere, the proper treatment would be to isolate affected individuals as soon as discovered and medicate the drinking water of the rest.

German Method of Preserving Eggs.

A series of interesting experiments in the preservation of eggs, carried on last year in Germany, has just been published in an official consular report. After eight months of preservation, 400 eggs, divided into twenty different parcels for that many methods of experiment, were examined, with heterogeneous results. Upon opening for use, the eggs presented the following results, according to the parcels originally numbered: 1. Eggs put up for preservation in salt water were all bad, not rotten, but uneatable, the salt having penetrated into the eggs. 2. Wrapped in paper, 80 per cent bad. 3. Preserved in a solution of salicylic acid and glycerine, 80 per cent bad. 4. Rubbed with salt, 70 per cent bad. 5. Preserved in bran, 70 per cent bad. 6. Provided with a covering of paraffin, 70 per cent bad. 7. Varnished with a solution of glycerine and salicylic acid, 70 per cent bad. 8. Put in boiling water for twelve to fifteen seconds, 50 per cent bad. 9. Treated with a solution of alum, 50 per cent bad. 10. Put in a solution of salicylic acid, 50 per cent bad. 11. Varnished with water glass, 40 per cent bad. 12. Varnished with collodion, 40 per cent bad. 13. Covered with lac (probably shellac varnish), 40 per cent bad. 14. Varnished with sward, 20 per cent bad. 15. Preserved in wood ashes, 20 per cent bad. 16. Treated with boric acid and water glass, 20 per cent bad. 17. Treated with manganate of potash, 20 per cent bad. 18. Varnished with vaseline, all good. 19. Preserved in lime water, all good. 20. Preserved in a solution of water glass, all good.

The last three methods are consequently to be considered the best ones, and especially the preservation in the solution of water glass, as varnishing the eggs with vaseline takes too much time, and the treatment with lime water sometimes communicates to the eggs a disagreeable odor and taste. There is one drawback with eggs preserved in a solution of water glass—the shell easily bursts when placed in boiling water. It is said this may be avoided by cautiously piercing the shell with a strong needle.

Carbolated Kerosene.

TO THE EDITOR:—One of the best remedies I know of for exterminating chicken pests is carbolated acid diluted with coal oil. Mix about 1 ounce crude carbolated acid to a pint of the cheapest coal oil. Spray the roosts, walls and floor. You can purchase a one-gallon can of the acid for about 75 cents and a five-gallon can of the oil for the same price, and this makes a cheap as well as an effective exterminator.

I notice Mr. Carpenter, in your issue of April 2nd, speaks of using water with the acid, but I find that it mixes thoroughly with oil and gives you two ingredients that vermin have no liking for.

Alameda, Cal.

H. F. WHITMAN.

SHEEP AND WOOL.

The Mission of the Merino.

The following is a portion of an address delivered by John S. Beecher, president of the Standard American Merino Association, at its last meeting:

The great influx of the foreign mutton breeds was the natural result of a disposition upon the part of our sheep men to take up something new and untried as a cure for the evils of a mistaken national economic policy. The lessons of experience that came to the party exploiting the policy will scarcely need repeating during this generation, and the men who sacrificed their merino flocks will want some of the blood again, and that from now on. Fortunately the man who has the material with which to recoup his fortunes, and thrice fortunate the man who stayed to the front through the thickest of the breed's struggle and maintained the number and improved the quality.

Merino Mutton.—The facts demonstrated by the experience of the last few years is that well-fatted Merino mutton is as good eating as the best of the so-called mutton breeds; second, that a Merino ewe, taken the year round, keep and care considered, is the most satisfactory of all sheep mothers. She will yield the heaviest and most valuable fleece of wool, and when bred to a Southdown ram, will produce an up-to-date mutton lamb satisfactory alike to both feeder and butcher.

What type of Merino will meet future demands? We are living in a wonderful age, a period of marvelous development, invention and discovery, and never before was competition so sharp and persistent, making necessary strict economy and best methods if success is to be attained in any business or calling, and the breeding of domestic animals is no exception. In this field, the expense of care and keep, on the one hand, and the capabilities of the animal or race, on the other, are elements for consideration and turn the scale for good or otherwise.

Careless and Slipshod Methods in growing and feeding crops to inferior and scrub stock have passed into history, more especially the scrub animal. Every industry must supply a need of mankind somewhere. All through the vast sheep walks of Argentina, Australia and the Transvaal are numerous bands of almost countless numbers of sheep, substantially Merino blood, kept with wool production the paramount object in view, and necessarily from the very order of things, inferior in type to the improved flocks, limited in numbers, in the hands of the world's great breeders. With the upward movement of wool in the American markets, these same conditions will prevail again in the vast plains of our country, West and Southwest. To furnish the material for the improvement of the fleece qualities of these sheep will, in the future, as in the past, be the mission of the stud flocks of American Merinos.

A Wool Outlet in Japan.

Reports received from Japan to the effect that woolen goods are rapidly supplanting those of cotton manufacture in that country is another convincing proof of the superiority of the former fabric over the latter.

Woolen underwear is becoming more and more popular in Japan, having displaced all other fabrics used for that purpose. The yearly imports of mousseline delaine amount to 37,000,000 yards. Woolen rugs and blankets are often worn in Indian style, and many shops are devoted entirely to their sale. Sheep do not thrive in Japan, and the four woolen factories furnish less than twelve per cent of the goods necessary for the consumptive capacity of the country. Consequently, the mills are compelled to import the most of their raw materials. One of these factories, by the way, is preparing cloth for the army and navy.

It is not at all surprising that Japan, in spite of her limited resources as a wool-growing country, should demand

more woolen and less cotton fabrics. Proportionately more woolen goods are being used every year, and it is but natural that the Island Empire should adapt herself to the fleeces of wool-bearing animals in preference to cotton, as all other civilized nations are doing to-day.

The development of the woolen industry in Japan will result in opening new markets to the growing manufacturing interests of the United States. Germany, Great Britain and other manufacturing nations of the Old World are practically supplying the demands of the Far East in the importations of wearing apparel, and the industrial growth of Japan, as well as of India, China and other countries, will have a tendency to stimulate the export trade of the United States rather than depress it.

THE DAIRY.

Up-to-Date Dairy Suggestions.

In last week's RURAL we gave a very important paper on dairy topics by Miss Eshleman of Fresno. Some of her arrangements for dairy service we also find described in a letter to *Hoard's Dairyman*, and they will prove suggestive to others who desire to improve their facilities.

Stable Floors.—We have in our three barns floors that are absolutely satisfactory, and that in the horse stable has stood eight years of wear. We put down under the animals, and 6 inches below the surface, pounded hardpan rock broken into lumps 2 or 3 inches in size. Then tramp heavy red clay into this until up to the required level. We spend four days between the various layers, tramping on about 2 inches daily. The ends of the stalls rest on a heavy 6x8 timber. In the cows' stable the Portland cement gutter begins against this timber; that is, a ledge of cement comes up to the top of it and protects the timber, making this side of the gutter 2 inches from the timber. The gutters are 8 inches deep, 14 inches wide at the top and 6 at the bottom. This gutter runs out to a cement cistern outside of the barn. Our cows face inward, or toward the hay. The walk behind them and next to the outside walls is 8 feet wide. In our horse stables the gutter is omitted, and under the horses the floor is made of heavy plank. At their rear—for they also face inward—is a 10-foot way of cement. This is corrugated with long lines about 2 inches deep and 4 inches apart, running to the gutter that runs along the outside wall into the outside cistern. We use gypsum on the cement floors. They are brushed up and sprinkled twice a day.

All our manure is saved in the best manner and hauled daily to the fields. The cisterns have the liquids pumped out of them twice a week. We have no odors under this plan. These floors of cement are never slippery when gypsum is used, and we know of absolutely no objection so far to their use.

Preventing Milk Fever.—We want to ask you if you do not think our total freedom from milk fever is in our having a good, warm blanket for our newly calved cows, as well as watching to prevent a chill. If we find a cow weak and cold, we give her promptly a dose of hot whisky and her own milk, and put two blankets on her. We have owned 381 cows during the past ten years and have now 137. So we naturally think this simple treatment, combined with feeding a cow carefully on laxative foods and not too heavily at one time before calving, has much to do with our immunity from this trouble. We are always dreading and watching for it to come, and can only hope it may not attack us.

Dropping the Bran.—The price of bran having reached \$18 per ton, we dropped it out of our feed, using chopped alfalfa hay, corn meal and cocoanut cake, wet up and fed. As fortune favored us at the same time in being at the end of our corn silage, and at the first of the oats and peas, we had our ration in reasonable balance.

If we had corn silage we would have had too much carbohydrates to handle. Now we are really surprised that our cows seem not to miss the bran, but are going straight on in their work of filling up the milk pails.

Artichokes.—We note some one asks about feeding artichokes to cows. We tried it once and found that, while the cows ate them and they seemed to have no bad effect on the milk, they were poor food, compared to beets or carrots. These we can plow out, while artichokes have to be dug out after we run the plow over the ground.

Balanced Silage.—We want to know more about the Robertson silage mixture of horse beans and sunflower heads. Can you tell the proportion or the amount we should sow of each to make say 100 tons of the crop? Also, how far apart should the rows be? We are anxious to be ready next month to put some land in this mixture.

Prof. Henry, in his new book on "Feed and Feeding," has this to say about the Robertson combination silage:

"Robertson, of the Dominion station, Ottawa, in the effort to secure a silage containing the nutrients of a balanced ration, concluded that the following mixture would prove satisfactory: Ten tons of green fodder corn, three tons of English horse beans, and one and one-half tons of sunflower heads. To secure the proper proportion of these crops under Canadian conditions, for each acre of corn there should be planted half an acre of horse beans and one-fourth of an acre of sunflowers. This mixture was found satisfactory in feeding trials with dairy cows and fattening steers. Since the horse bean does not thrive in the United States, except possibly in the extreme north, some other plant must be substituted in mixtures of this character. Mr. G. F. Weston, superintendent of the Biltmore estate, North Carolina, reports to the writer that he has found that one load of cow pea vines mixed with two loads of green corn forage produces an excellent silage for dairy cows."

America's Six Greatest Dairying Authorities on Cream Separators.

University of Wisconsin Experiment Station.

Madison, Wis., Jan. 10, 1898.

"Another year's experience in our creamery, which we operate in a practical way as well as for experimentation and instruction, has given us still higher appreciation of the 'Alpha' De Laval separators. The exhaustiveness of the skimming under the varying conditions of milk-flow and temperature continues highly satisfactory and the machines give full evidence of lasting qualities under daily use."

W. A. HENRY, Dean and Director.

Cornell University Experiment Station.

Ithaca, N. Y., Jan. 10, 1898.

"Another year's experience serves to confirm our opinion of the 'Alpha' De Laval separators. It has been my good fortune to observe closely the operation of a large number of separators of the various kinds in general use, and my observation has led me to believe that in material, workmanship, and efficiency of separation, the 'Alpha' De Laval machines easily rank first."

H. H. WING, Professor of Dairy Husbandry.

Michigan Experiment Station.

Agricultural College, Mich., Jan. 12, 1898.

"It gives me great pleasure to repeat my testimony as to the value and efficiency of the De Laval separators. For another year they have been in constant use under my immediate observation. The per cent. of fat in the skim-milk is seldom more than a mere trace. Although subjected to the trying conditions of our Dairy course, where beginners must put them together and operate them, they have required little or no repairs and are still in excellent condition. The results of a long course of experiments, during which these machines have been subjected to every reasonable test, commend them for efficiency, thoroughness of skimming, small power required, ease of management and perfect construction."

CLINTON D. SMITH, Director.

Dr. S. M. Babcock.

UNIVERSITY OF WISCONSIN EXPERIMENT STATION.

Madison, Wis., March 5, 1897.

"For the past six or seven years we have used at the Experiment Station and in our Dairy School nearly every type of De Laval separators, and without exception they have given excellent satisfaction. We have had the 'Alpha' machines in our Creamery and Dairy School since their first introduction in the United States. These machines are easily managed, skim close under varying conditions, run light, cost little for repairs, and give a smooth cream, well suited for pasteurizing and the general trade, as well as for the manufacture of butter."

S. M. BABCOCK, Chief Chemist.

The author of "American Dairying."

De Kalb, Ill., Jan. 17, 1898.

"I became acquainted with the 'Alpha' separators when first introduced in this country, while in the employ of the Wisconsin State Experiment Station as Dairy Instructor, in 1891. Its work then convinced me that it was superior to any separator in the field. This opinion has been fortified more strongly each succeeding year by what I have learned of its work in comparison with other separators."

H. B. GURLER

University of Minnesota Experiment Station.

St. Anthony Park, Minn., Jan. 24, 1898.

"We have now operated the different sizes of the 'Alpha' De Laval separators in our college of agriculture, school of agriculture, and experiment station for the past seven years, and in every instance they have given entire satisfaction. They all skim clean to their full rated capacity and at a wider range of temperature than is claimed for them. I do not see how it could be otherwise when the law of gravity and the distance the milk must travel in passing through the separator is taken into account. The thinner the layer of milk as it passes between the discs, and the further the milk must travel under centrifugal pressure the more exhaustive and complete the separation. It, therefore, follows that the 'Alpha' is the ideal separator."

T. L. HAECKER, Professor of Dairy Husbandry.

The sale of "Alpha-Baby" cream separators is now almost universal. The number in use exceeds 125,000. Their sale is ten to one of that of all imitating machines combined. The improved 1898 machines are better than ever, and possess from 10% to 25% greater intrinsic cost and producing value than ever before. Send for new "Dairy" catalogue No. 268 or new "Creamery" catalogue No. 508.

THE DE LAVAL SEPARATOR CO.

Western Offices:
RANDOLPH & CANAL STS.
CHICAGO.

General Offices:
74 CORTLANDT STREET,
NEW YORK.

Branch Offices:
1102 ARCH STREET,
PHILADELPHIA.

THE HOME CIRCLE.

He Once Was a Boy On the Farm.

The man in the school where the ethics are taught,
Professor of Latin and Greek,
Can tell of the way that life's battles are fought,
And fluent the words he will speak.
But oft he is thinking of valleys and hills,
The forest and meadow's sweet charm;
Though high is the station to-day that he fills,
He once was a boy on the farm.

That man in the church who is preaching to-day
With power and with purpose to save
The souls and the people who listened to pray,
While gladly his message he gave,
Remembers the lilies that grew in the dell,
The sparrow safe sheltered from harm
By the Master that now he is serving so well,
He once was a boy on the farm.

The man who is first in the halls of the State
And versed in the laws of the land,
Beloved by the people with honors so great,
His word is a power to command—
Looks off to the mountain now mottled with green,
Then down at his muscular arm,
And longs but again in the harvest to glean;
He once was a boy on the farm.

That man who is chief of our armies to-day,
Now guarding the lines of the West,
Though looking with pride on his troop's bright array,
Has love for the farm in his breast.
He thinks of the field where the daisies are white,
And sighs for the noisy alarm
Of the cock of the barnyard to vanquish the night,
He once was a boy on the farm.

—Ruth Raymond.

A Japanese Story.

A long, long time ago, there dwelt a father and mother whose little daughter was as beautiful as the sun-light itself. But one day, the father was called to the city where the king dwelt, and so was forced to say good-bye to his beautiful daughter for the first time in her short life.

Now the child's mother had never been away from her home in all her life; and so when the father went so far away she was frightened. She was sure some dreadful thing would happen to him; and still she was very proud; for he was the first man from that town that had ever been called by the king to the great city.

At last the time came for the father to come back. The fond mother—as mothers in all the time have done—dressed herself and the beautiful child in their prettiest dresses and together they waited his coming.

By and by he came; and he brought with him many presents for both mother and child, and beside he had marvellous stories to tell of the wonderful far-off city.

"I have brought you the most strange present," said he to his wife. "It is called a mirror. Something we have never had in our village, and I think no one of us ever even heard of one before."

Then he gave the little box to his wife, saying, "Tell me what you see."

She opened it. There lay a piece of shining metal. It was ornamented with frosted silver, carved in birds and flowers. "How beautiful!" said the wife. "How its shines! and how beautiful the birds and flowers are!"

"Look closely into it," said the husband "and tell me what else you see."

The good wife raised it and looked into it.

"Why!" she said, "I see a beautiful woman's face. How her eyes shine; and what a bright, shining face she has. And her lips are moving as if she were talking. And—how strange!—she has a dress of blue exactly like my own!"

How the husband laughed. How proud he was that he knew something no one else in the village knew.

"Dear wife," said he, "it is your own beautiful face you see; it is your own laughing eyes; for this is a mirror and it shows everything that is held before it."

"How wonderful!" was all the amazed wife could say; and all day long she and her little daughter looked into the mirror and laughed and talked with it.

But then it came into the thought of

the mother, "How vain I am. I am very foolish."

And she hid the mirror away and never allowed herself to ever take one tiny peep into it.

Years passed away; the little child had grown to be a young woman as beautiful as her own mother. Indeed, she was so exactly like her mother that one could hardly tell them apart except that one was a little older than the other.

But one day the good mother grew very ill. She knew that she had only a few hours to live, and her heart was very heavy to think that her dear child would soon forget her.

So she took the little mirror out from its hiding place and called her daughter to her.

"Dear child," said she, "I am going away to leave you. But here is a little mirror. Promise me that every morning and night you will look into it, for you will see me there and then you will know that I am watching over you always. When you are happy you will see that I am happy; and when you are sad you will see that I am sad with you."

Then the mother died and the child was left alone with her father.

But she was not sad for she had the wonderful mirror. Every night and morning she looked into it and saw her mother's face looking up into hers.

Every night she told the face in the mirror all that had happened during the day; and the mother spoke back always though she could not hear what she said.

So the child lived on growing sweeter and lovelier every day; for she thought always only such thoughts as she would like her mother to see, and did only those things that her mother would like to know she had done.

"Dear mother's face grows kinder and sweeter every day," said she to her father one day.

The father's eyes filled with tears, "Yes, dear child," said he, "it does; and your own face grows every day more like your mother's. And it will be so always so long as you are good and true."

One day a handsome young prince came riding through the town. "Who is that lovely maiden?" said he, as he passed the home of this sweet young woman. "For never in my life have I seen a face so sweet. Would that she might dwell with me in my palace and be my princess!"

And so it came about that one day the beautiful daughter left her father's home to be a princess. And never till she reached the great city where the grand ladies all had mirrors, did she know that it was her own face she had been looking into all these years.

But now she understood; and she loved her sweet mother all the more now that she knew her mother had taken this way to help her grow good and true, when she could no longer herself guide and teach her.

Curious Facts.

The superintendent of the Missouri State Fish Hatchery was recently surprised on draining off a pond containing bass to find very few fish in it. At first theft was suspected, but closer investigation revealed the missing fish in a condition of hibernation, or winter sleep, in the mud covering the bottom of the pond.

Watches should be wound in the morning, says an experienced jeweler. The mainspring of a watch should always be relaxed at night when the watch is still, and tight when the watch is carried about in the pocket during the day. Winding every morning will effect this purpose, and invariably secure the most accurate time.

An island, it is announced in Paris, has suddenly appeared on the north-west coast of Borneo, opposite the town of Labuan. Its appearance appears to be due to the earthquake which happened in September, near Kudat, in British Borneo. The island is composed of clay and rock. It measures 200 yards in length by 50 in width, and it has gone on increasing since its first appearance.

Si Tucker, Coward and Hero.

"I was in command of Fort Lamkin, a mortar earthwork in rear of Gen. Bushrod Johnson's lines at Petersburg in 1864," says George Cary Eggleston. "The fort was named for our immediate commander, from whose command we had been detached for this service."

"One day Lamkin himself came to me when I was at his headquarters. He was in trouble."

"This boy, Si Tucker," he said, 'is the son of one of the best friends I ever had in the world. The boy is a coward. He literally lives in a rat-hole. I have repeatedly pulled him out by the legs, only to have him crawl back again the moment I let go of his ankles. I don't know what to do. It's my duty, of course, to prefer charges of cowardice against him, and if I do he will certainly be shot, and his father is my best friend.'

"He paused, and then said with eagerness in his voice: 'Why can't you take him?'"

"I agreed at once. I told him I would take the boy with me to my pits and make 'either a soldier or a stiff' out of him within the next twenty-four hours. I was under no obligations of his father; I had never even met any of his relatives, and I had seen too many years of service to have much patience with cowardice."

"The boy was sent for and ordered to go with me. We walked down toward Blanford church. At the proper point we turned out of the Jerusalem plankroad across the fields toward Fort Lamkin. Half way there, and on the top of a little hill, which was especially exposed to the gaze of the sharpshooters, I made Si Tucker sit down by my side. There we came to an understanding. I told him he had been assigned to me to be shot out of hand, or to be court-martialed for cowardice, which, at that particular juncture of the war, meant very much the same thing. I explained to him that he was about to join a detachment composed exclusively of men specially selected for their courage—every one of them a volunteer for what was deemed a peculiarly dangerous service. I explained further that I should require him to do his duty as they did theirs."

"You have managed to make for yourself," I said, 'the reputation of a coward. You have now one last chance to redeem yourself. You must do that or you must die.'

"The sharpshooters were meantime picking at us most uncomfortably as we sat there. My experience as an old soldier strongly suggested to me that we ought to move. The position was of that kind that military men call untenable. Nevertheless, I thought it best to keep Si Tucker there a minute

longer, for purposes of observation if nothing else.

"At our pits," I said, 'we have one uniform rule of procedure. When a bombardment begins the men go to their guns. I take my stand on the top of the magazine mound to watch the enemy's fire and direct our own. If I see that a mortar shell is about to fall into one of the gun pits I call out the pit number and the men run into the bombproof until the explosion is over. No man never goes into a bombproof till this order is given. You must do as they do. If you run to a bombproof before I have given the order it will be my imperative order to shoot you then and there, and I shall certainly discharge that duty. Do you fully understand that, Si?'"

"He thought he did, and as the sharpshooters were by this time becoming pestilently personal in their attentions, we resumed our walk. Half an hour after our arrival at Fort Lamkin a bombardment began. I didn't want to shoot that boy. I distinctly preferred to make a soldier rather than a 'stiff' out of him. So, instead of taking my customary stand on the mound of earth over the magazine, I ordered Joe to that post and placed myself in the gun pit to which Si Tucker had been assigned, taking care to stand between him and the mouth of the bombproof. I spoke to him as I passed. "Remember what I told you. If you forget, it is intant death."

"He remembered. For nearly two hours he stood there, quaking and shivering, but not daring to seek safety by retreat to a bombproof. By the time that the outburst was over, Si Tucker had learned his first lesson in war. He had learned to realize that a man may endure a lot of very savage fire and yet come out of it alive. A few hours later, when the guns were at work again, Si was steady enough in his nerves to carry shells to the guns. The next day he was even able, during a bombardment, to cut fuses—a delicate operation, requiring a steady hand. Within two or three days he had become as good a soldier as we had in all that band of men specially picked for their unflinching courage."

"When the great mine explosion occurred a few weeks later I had occasion to rebuke Si Tucker for a fault quite unrelated to cowardice. We had been ordered to go with our mortars as near as possible to the crater and to drop a continual rain of shells among the thousands of helpless fellows in that awful pit. It was cruel, ghastly work. But it was war. And a poet has justly characterized war as a 'brain-pattering, windpipe-splitting art.' Or, as General Sherman once said, and he knew, 'War is all hell.' "We were within sixty yards of the crater. Each one of our mortars was belching from three to five shells a minute into that hole, but Si Tucker's enthusiasm was

"MY WIFE'S LIFE."

How I was the means of saving it.

When the lungs are attacked and the symptoms of consumption appear, then begins the struggle between affection and that destroying disease which slays its thousands annually. It is a happy issue to the struggle when disease is conquered and health restored. Such an issue does not always end the struggle, but it did in the case of Mr. K. Morris, Memphis, Tenn., who saw his wife wasting and weakening and physicians helpless, and then suggested the simple remedy that wrought the cure. He tells the story thus:

"Seven years ago, my wife had a severe attack of lung trouble which the physicians pronounced consumption. The cough was extremely distressing, especially at night, and was frequently attended with the spitting of blood. The doctors being unable to help her, I induced her to try Dr. Ayer's Cherry Pectoral and was surprised at the great relief it gave. Before using one whole bottle she was cured, so that now she is strong and quite healthy. That this medicine saved my wife's life I have not the least doubt. I always keep Dr. Ayer's Cherry Pectoral in the house. Whenever any of my family have a cold or cough we use it, and are

promptly cured."—K. MORRIS, Memphis, Tenn.

The question: "Is consumption curable?" is still debated, and still debatable. It is easy to say that this was not a case of consumption. Yet the physicians said it was. They should know. As a matter of fact, Dr. Ayer's Cherry Pectoral has wrought so many similar cures that it seems to argue the curableness of consumption, in its earlier stages, by the use of this remedy. There is no better medicine for pulmonary troubles than Dr. Ayer's Cherry Pectoral. It gives relief in cases of Asthma and Bronchitis, where relief has been heretofore unattainable. It promptly cures Coughs and Colds, La Grippe, and all affections of the throat and lungs. Heretofore, Dr. Ayer's Cherry Pectoral has been put up in full size bottles only, at \$1.00 per bottle. To meet a world-wide demand for a smaller package, the remedy is now put up in half size bottles, at half price—50 cents. Write for Dr. Ayer's Curebook (free) and learn more of the cures effected by Dr. Ayer's Cherry Pectoral. Address J. C. Ayer & Co., Lowell, Mass.

not satisfied. Having no personal duty to do at the moment he began, plugging shells with long fuses, lighting them, running with the nto the margin of the pit, and tossing them in as hand grenades. He was greeted by a tremendous volley of musketry at each repetition of this performance, but he did it three times before we could stop him.

"That evening, near the gloaming, he did another thing. The lines had by that time been restored. The men in the crater—those of them who had not been killed—had been driven back to the Federal side. We became aware of the fact that a poor fellow of our own was lying grievously wounded near the Federal side of the fifty yards that separated our works from the enemy's. He had been lying there through all that long, fierce summer day. The explosion at daylight had cast him there. His groans and his cries for help and for water were pitiable in the extreme. We listened to them heartbroken, but helpless—all but Si Tucker.

"Si began stripping off his clothes; we thought he had gone mad. But when we asked him why he was stripping himself he replied: 'Never you mind.' With that, stripped to the skin, he leaped over the works, ducked his head low, and ran through the hail-storm of bullets to where the wounded man lay. Grasping him quickly, he slung him upon his back like a bag of meal, and ran back with all his might. As he crossed the works he fell headlong. The surgeon found three bullets in his body. Nobody in the battery ever remembered after that that Si Tucker had once been a coward. After all, it is, perhaps, mainly a question of nerves."

Popular Science.

The rate of the growth of human hair varies. In some cases it has been known to exceed two inches per month. The average for man and woman is about half an inch every thirty days.

A baseball compared to a sphere 27 feet in diameter gives the relative size of the earth and sun. The sun's bulk is 1300 times that of the earth. The mass of the sun is 333,000 times that of the earth.

Wind power is derived from the unequal heating of various portions of the earth by the sun's rays. Water power is derived from the evaporation of water by the sun's heat and its deposition on highlands in the form of snow or rain.

The duration of sunshine in the various countries of Europe was recently discussed at a scientific meeting. It was shown that Spain stands at the head of the list, having on the average 3000 hours of sunshine per year, while Italy has 2300 hours, Germany 1700 hours and England 1400 hours.

Sea birds frequently spend weeks at sea, and are believed to quench their thirst partly from the falling rains and partly from the fat and oil which they devour ravenously when opportunity puts it in their way. The keen eyesight of birds is well known, and sea birds have been observed flocking toward the storm-cloud, about to burst, from all points of the compass, and apparently drinking in the water as it descends from the skies.

Dr. Howard, the new secretary of the American Association for the Advancement of Science, writing of the manner in which seeds are carried to great distances by birds, recited an experiment of Darwin, which had a curious result. Adhering to the leg of a wounded partridge, Darwin found a ball of earth weighing six and a half ounces. From the seeds contained in this ball he raised thirty-two plants belonging to five distinct species.

The Index to lamps and the chimneys for them will save you money and trouble.

We want you to have it.

Write Macbeth Pittsburgh Pa

Gems of Thought.

A duty is no sooner divined than from that very moment it becomes binding upon us.—Amiel's Journal.

The golden age is not in the past, but in the future; not in the origin of human experience, but in its consummate flower; not opening in Eden, but out from Gethsemane.—Chapin.

There can be no faith and dependence without miracle. But miracle does not mean the violation of known law; it is the discovery and fulfilment of unknown law.—Mozoomdar.

You have asked for greater understanding of the truth, and it shall be given you, as you earn the blessing. Have no fear. Simply trust God, and rest.

Let there be no discouragement, but a steady, earnest, persistent determination to work with loving regularity, not considering results, knowing that all true development is according to law. Let spiritual attainment be your first object, above all else; and, finally, life's problems will disappear.

If the mother's love or the lover's love, being a love of souls, is a part of the soul itself, then both we who remain a little longer and they who go amid our sighs and tears can wait patiently, as one waits in Europe for the coming of the dear one, or waits in America for the return home.—Selected.

Around us the spiritual is everywhere trying to express itself through what we call the natural. If we know how to look for it we would everywhere find the heavenly hidden in earthly things. To comprehend spirit and form their eternal harmony, to live in their true relations to each other, is to have won the secret of life.—Lucy Larcom.

A man that is fit to make a friend of must have conduct to manage the engagement and resolution to maintain it. He must use freedom without roughness, and oblige without design. Cowardice will betray friendship, and covetousness will starve it. Folly will be nauseous, passion is apt to ruffle, and pride will fly out into contumely and neglect.—Jeremy Collier.

Devotedness, lifelong, unflinching, entire, is the secret of every success. However humble your good work be, fear not to be devoted to it till the end. Bear every reverse, every discouragement, every trial. Let your devotedness be without reproach or question. Success comes late, by very slow approaches—nay sometimes after the worker has passed away. But he who practises and teaches devotedness handles the lever that is sure to move the world in the end.—Mozoomdar.

These mystic souls of ours are sealed to ourselves. There is no key to unlock the reserved powers fed from divine founts, whence we can never be cut off, but the demands of fate. They can make the tenderest heart manly, the meekest saint do sternest work. They can break the thick crust that covers some undeveloped soul from whom you hoped nothing, and lo! a hero, a lover, a leader of men. In great spheres or in small, it is necessity that trains and matures us.—Samuel Johnson.

Humility is truth and pride a lie; the one glorifies God, the other dishonors him. Humility makes men to be like angels, pride makes angels to become devils. Pride is folly; humility is the temper of a holy spirit and excellent wisdom. Humility is the way to glory, pride to ruin and confusion; humility makes saints on earth, pride undoes them. Humility beatifies the saints in heaven, and the elders lay down their crowns at the foot of the throne; pride disgraces a man among all the societies on earth. God loves the one, and Satan solicits the cause of the other.—Jeremy Taylor.

An effort has been made to determine the pulling strength of elephants, horses and men. Attached to a dynamometer, Barnum & Bailey's largest elephant registered a pull of two and one-half tons on the second trial, but a smaller and more active elephant gave a record of five and one-half tons—

whether as the result of a steady pull or sudden jerk seems to be uncertain. A pair of powerful horses registered a ton and a fifth, while it required the strength of eighty-three men to equal the pull of the smaller elephant.

DOMESTIC ECONOMY.

Hints to Housekeepers.

If you have dropped ink on a white apron, you should wash it with oxalic acid and then with warm water.

Rub your stove off daily with newspapers; it will keep it in fine polish, and it will not be so hard on the hands.

To clean lamp burners, boil with potato skins or in strong soapsuds or vinegar. Then rub to remove smoke.

Thin shavings of sugared ginger and candied orange peelings are a combination that finds favor as a sandwich filling.

The etiquette of table glassware seems to be, at the moment, that goblets shall be seen at dinner, while tumblers are suitable for luncheon and breakfast.

To remove a refractory screw from wood, heat a piece of iron red hot and hold it on top of the screw for a minute or two, then the screw-driver will easily take out the screw if used while the screw is warm.

Lemon juice in a tiny cup without handles, and from which it is ladled with a little silver spoon, is often handled round at the five o'clock tea service instead of the sliced fruit. A little tray frequently holds the cup of lemon juice, the tiny individual decanter of rum, and the little bowl of lump sugar, that choice may be had of the different condiments.

Not many people know that a bunch of celery in the hands of a good housekeeper is one of the few things about which there is absolutely no waste. From an ordinary bunch of celery of five stalks pick off the large leaves, wash them, and place in a quart of water, letting the quantity boil down to about half a pint; when cold, bottle this liquid and keep in a cool place, to be used for flavoring gravies and soups. Next, the five roots; wash and boil the same as potatoes, trying them with a fork to tell when done. Cut them into thin slices, add a finely cut onion, and make into a salad the same as the ordinary potato salad. The large and coarser stalks of celery cut into inch lengths, boil, cover with a cream sauce and serve as a vegetable. The delicate stalks use as ordinarily for a relish, and the young yellow leaves will be found to make a pretty trimming for the meat dish. This uses every scrap of the celery itself, but the careful housekeeper will not even discard the string which ties the stalks together, but, if it is long enough, will roll it up for future use.

Domestic Hints.

SOFT GINGER CAKE.—Take a teacup and put into it four tablespoonfuls of hot water, three of melted butter, and fill up the cup with molasses. Put into the stirring bowl one teaspoonful of ginger and one of soda, and to this add the mixture in the cup. Stir in enough flour to make a stiff cake dough. Pour into square tins and bake carefully.

IMPERIAL CAKE.—Rub to a cream one pound of sugar and three-quarters of a pound of butter, add ten well-beaten eggs, a pound of flour, a pound of almonds blanched and cut fine; one-half pound of stoned raisins, one-half pound of citron sliced fine, rind and juice of a lemon and one grated nutmeg. Mix all well together and bake slowly.

BREAD CAKE.—Beat together one cupful of butter with two of sugar; add two well-beaten eggs, two cupfuls of stoned raisins, two-thirds teaspoonful of soda in one of milk, and last of all stir in three cupfuls of light bread dough; work until thoroughly mixed, set in a warm place to rise, and when light bake in a moderate oven for an hour or more.

BOUQUET FOR STOCK.—Put a handful of parsley on the table, lay a sprig of thyme, one bay leaf, three cloves, a blade of mace and six whole peppers on top of the parsley; fold the parsley around the herbs and spice and tie it into a bundle; when the soup begins to boil add a carrot, one white turnip, three onions, half tablespoonful salt, one leek and the bouquet; cover the kettle and let it boil slowly till the meat falls from the bones; then strain the stock, remove all the fat, and your stock is ready to be used.

BUTTERED EGGS AND KIDNEYS.—Cut three sheep's kidneys into thin slices, then into strips. Dust with salt and pepper and saute in a little butter or fresh beef dripping. When browned set aside where they will keep hot. Into a shallow saucepan break six eggs, beat just enough to mix, add three tablespoonfuls of butter cut into bits, one-quarter of a tablespoonful of finely chopped parsley and four tablespoonfuls of cream. Stir over the fire until nearly set, add the fried kidneys, turn out on a hot platter and garnish with toast points.

POTATO CAKES.—Bake some nice mealy potatoes, and while hot scoop out all the floury inside and mix it with a pound of flour (there should be a pound of the potato flour), into which you have previously rubbed four ounces of good lard or dripping or half of each, a teaspoonful of baking powder, and a pinch of salt. Stir a whole well-beaten egg into this, and work it to a smooth light paste with a little milk. Roll this paste out an inch or so thick, cut in squares, and bake on a buttered tin. The result is delicious cakes, which should be slit open, buttered and eaten hot.

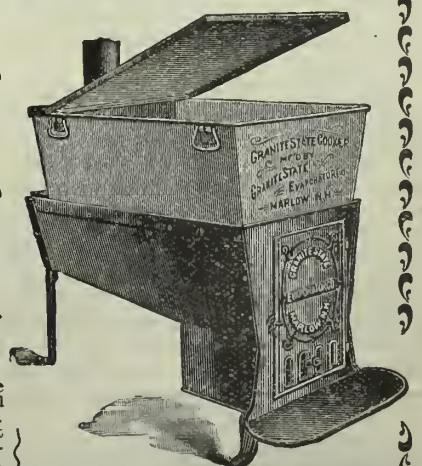
THE GRANITE STATE Feed Cooker and... Water Heater

The lightest, most convenient
and most
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Stock Raisers and Dairymen.

The Boiler is made of galvanized steel. The Furnace sides and linings are of sheet steel plates. Front, door and hearth of cast iron. There is no reason why this cooker should not last a lifetime. The boiler can be used for heating water and cooking all kinds of food for hogs, cattle, dogs and poultry; and with an extra boiler, for preserving fruits, vegetables, boiling elder, making apple jelly, and many other purposes for which a large cooking utensil is desired. Made in 7 sizes: 25 gallon, \$12; 50 gallon, \$17; 100 gallon, \$24. Send for circulars containing full description and testimonials.

Sold on installments if desired.
We publish a book, "Cooking Food for Stock," which we will send free if you mention this publication when you write.

GRANITE STATE EVAPORATOR CO.
6 Temple Court, New York



50 gal. size, 36 inches high, weighs 190 lbs.

Guaranteed just as represented in the illustration or money will be refunded. Hundreds sold. No complaints.

GENTLEMEN:—I have used the Granite State Feed Cooker every day since I received it, cooking food for from three to four hundred fowls, and it has always worked perfectly, the grate and ash-pit giving it a perfect draft. The whole thing shows good judgment and mechanical skill in plan and manufacture.

Yours truly, Wm. E. COGGESHALL.
Newport P. O., R. I., June 18th, 1897.

GOOD HEALTH.

Sanitation in Country Homes.

(Continued from last issue)

Moisture in the Air.—Too often, in the case of illness especially, do we forget the necessity of moisture in the atmosphere of rooms heated by hot air or coal-oil stoves. Water should always be in some receptacle on such stoves. If the lungs are supplied with impoverished air they gradually lose the power of resistance to alterations of temperature, and the time comes when a sudden change unheeded before checks the natural action of the breathing apparatus and brings about inflammation of the air tubes—bronchitis—or the substance of the lungs—pneumonia. Wet feet and bedraggled clothes may be harmless in active exercise, but dangerous otherwise. It is remaining in a cold apartment in an inactive condition, or keeping on the wet clothing after exercise has ceased, that gives rise to dangerous conditions. The clothing should be so regulated that the ordinary changes of the weather shall not be felt by a person in such a way as to make a permanent impression on the system.

Deep breathing is another important adjunct to good health, and I think this, with many other health rules, should be taught and practiced in our schools. I wish here to add my mite toward the single-bed plan of sleeping. Aside from economy in bedding and laundering the same, the custom of double beds has nothing to commend it.

Sleeping Arrangements.—The close contact of a common bedcover multiplies the danger of infection, in such diseases sometimes beginning with one, in the case of children, before the mother is aware of it. It is a question even in common colds and other ailments how much the confined air under the bedclothes may poison the system of the well child. Certain exhalations, even in a state of health, render the immediate air obnoxious. The custom is not conducive to restfulness. One person may be restless and wakeful and disturb the other.

Too frequently a pallid child or young person who complains in the morning of being tired has shared the bed of an older person, or one not strong in health, or a restless sleeper. One loses vitality, appetite and roundness with no benefit to the other. The remedy is a separate bed, early and quiet sleep, plenty of pure air. Then, if awakened naturally, given a quick bath with a brisk rub, it will be strange if marked improvement does not follow, and this applies equally to adults, with a normal appetite for normal food. And this brings us to the question of dietetics, which is one so full of possibilities for health or disease that I can only speak of it relatively and briefly. The most healthful food is, of course, that which is best fitted for the wants of the user. The cheapest is that which furnishes the largest amount of nutriment at the least cost. The best is that which is most healthful, most appetizing and the cheapest.

Pure Food.—We in the country have less to fear from food adulterations and impurities than city or town people, and yet in some things we need to exercise the greatest care. We ought always to have good, clean, pure milk. But even if the greatest care be used to insure clean pails, cans and pans by careful washing, scalding and drying, it too frequently happens that the milker's hands are not clean, that dirt from the cow contaminates the milk, that no care is taken to insure the

clean operation of milking. The milk may always become spoiled by putting in a cupboard with stale cheese, ham, onions, decomposing meat, etc. Its absorbent power is strong and it should never be left exposed in the sick room, in a bath-room or near a waste pipe.

The same may be said of butter. Water for drinking and food of any kind, it should be remembered, ought not to remain in a sick room.

The whole matter of dietetics in both health and disease seems to be an elaborate one, but it is certainly one of the most important, and when fairly understood and made practical will cut down the death rate and the percentage of disease accordingly. Cleanliness is the basis of all sanitation, and this should be habitually practiced everywhere about the home.

School Buildings.—Then, too, it should be insisted upon by parents and teachers in the schools. The Connecticut State Board of Health has ordered that every school building in the State shall be thoroughly fumigated during the summer recess.

The trustees should see that school rooms be thoroughly cleaned and we might say thus disinfected, especially during the vacations. The floors should be scrubbed with carbolized acid. I know of a school house where the floors had not been washed for a year.

(To be Continued.)

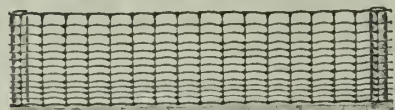
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Prepare for War!

New Coast Defense. Stretch Page Fence a few miles to seaward, and say, "Come on!" The recoil of the fence will return the enemy by the route he came took. Suitable posts wanted.
PAGE WOVEN WIRE FENCE CO., Adrian, Mich.

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We offer for sale a choice lot of

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One and two-year buds of the leading varieties, on sour or sweet stock.

Prices to Suit the Times.

SEEDLING ORANGE TREES at your own price. Correspondence solicited.

Oroville Citrus Association,
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Steam Evaporating Plant of Two No. 4 California Acme Evaporators and One 16 H. P. Boiler, Almost New. Cash or easy terms.
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Send for List. Hooker & Co., San Francisco

A RUBBER.

ST. JACOBS OIL
FOR
SORENESS AND STIFFNESS. It cures in two or three vigorous rubs.THE IMPROVED
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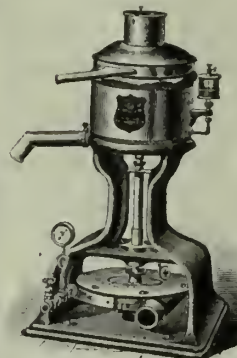
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| Vermont Experiment Station Dairy School..... | 0.01 |
| Minnesota Experiment Station..... | 0.02 |
| Pennsylvania Experiment Station Dairy School..... | 0.04 |
| Indiana Experiment Station Dairy School..... | Trace |
| Ohio Experiment Station..... | Mere Trace |
| North Carolina Agricultural and Mechanical College..... | Trace |
| Indiana State Board of Agriculture (Department of Dairy Produce and Cattle), No Trace | |
| Illinois Experiment Station..... | Less than 0.1 |
| Maine Agricultural Experiment Station..... | 0.03 |
| New Hampshire Agricultural College..... | 0.01 |
| Massachusetts Agricultural College..... | 0.01 |
| Wisconsin Agricultural Experiment Station..... | 0.02 |
| So. Carolina Clemson Agricultural College..... | 0.04 |
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Don't guess what your cows are doing, but KNOW.

Don't think your cows are all right when you can KNOW.

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Don't let your creamery man skin you; keep a check on him.

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and let your creamery man know that you have it. Let six of you club together and get six machines for fifty dollars. They are well made—regular life lasters.

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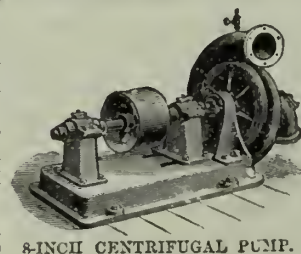
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First-Class Machine Work

Promptly, and at Reasonable Prices, and will continue the manufacture of

Thomson & Evans Steam Pumps,

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Also Marine Engines, Ship and Steamboat Work, Pipe Cutting, General Jobbing and Repairing.

GOPHERS OR SQUIRRELS

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How's This?

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Props, Toledo, O.
We, the undersigned, have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligations made by their firm.

WEST & TRAU, Wholesale Druggists, Toledo, O.
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Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price 75c per bottle. Sold by all Drug Gists. Testimonials free.
Hall's Family Pills are the best.

Our Animal Resources.

The value of all classes of farm animals in the United States on January 1, 1898, was \$150,000,000 greater than a year ago, according to the annual live-stock report recently published. This places the total value at \$2,037,000,000, against \$1,887,000,000 a year earlier. In this improvement every class of farm animals, except mules, bears a part.

The most gratifying feature of the showing this year, because it must be taken as indicative of the permanent character of the improvement, is the fact that this gain in price is quite generally accompanied by an increase in numbers. Horses and mules show a slight decrease, though in case of each the general situation is improving, and horses show an advance of approximately \$2.31 per head. The number of milch cows has increased slightly and the average price advanced \$3 per head.

The total number of sheep is now estimated at more than 1,000,000 above last year's figures, and the average price is placed at \$2.50 per head, against \$1.95 in 1897 and \$1.60 in 1896. The highest average price of sheep per head since 1890 was reported January 1, 1893, at \$2 66.

Vitality of Dogs.

During the summer of 1895, at the Jessie mines in Gold Run, near Breckenridge, Colo., a Scotch terrier dog, "Dixie" by name, and the property of Mr. W. L. Wilson, Mgr., fell into a dry winze in one of the old workings, where she was found alive after being in the hole for thirty-two days. She had neither food nor water during this time. She was very fat when lost but very thin and weak when found. She recovered entirely.

At Sulphur Creek, Cal., an old hound belonging to Mr. H. A. Blanck fell into a dry disused shaft, 65 feet deep, on the 14th day of March, 1897, and was found and taken out alive on April 13th following, having been in the shaft thirty days without food or water. He also was very fat when lost and very weak and poor when found. He recovered entirely. I suppose this was enforced hibernation similar to that practiced by bears and like animals.

PH. REARDEN.

Sulphur Creek, Cal.

ACCORDING to current report, a Paris physician has discovered what will be of undoubted value to electrical men who are so unfortunate as to be burned by the electric current. A solution of one part picric acid and 75 parts of water will cure quickly the most serious burns occasioned by the electric current. The pain is removed without blistering or irritation. A yellow tint is left on the skin, which may be removed by a solution of boric acid.

At DeLamar, Nevada, steam motors are being substituted for mules and horses for freight purposes. At Verdi such motors capable of hauling fifty tons have long proved valuable on steep grades. In Humboldt and Churchill counties borax and soda are similarly handled, the level country there admitting a speed of eight miles per hour. Gasoline is used for fuel with gratifying success.

Keep butter where it is cool and dry. Be sure there is nothing odorous near—spices, fish or any odored article.

Cocoanut Oil Cake.

THE BEST FEED FOR STOCK, CHICKENS AND PIGS.

For sale in lots to suit by
EL DORADO LINSEED OIL WORKS CO.
208 California St., San Francisco, Cal.

THE IMPROVED VICTOR INCUBATOR

Hatches Chickens by Steam Absolutely self-regulating. The simplest, most reliable, and cheapest first-class hatcher in the market. Circulars free.
GEO. ERTEL CO., Quincy, Ill.

Breeders' Directory.

Six lines or less in this directory at 50c per line per month.

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F. H. BURKE, 626 Market St., S. F. Holsteins, winners for three years of State Fair butter contests; Jerseys and Durhams competing. New Catalogues. Registered Berkshires.

JERSEYS, HOLSTEINS & DURHAMS. Best Butter and Milk Stock. Thoroughbred Hogs and Poultry, William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER SAXE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

E. S. DRIVER, Antelope, Cal. Durham Bulls, Jacks and Jennies for sale.

Poultry.

FOR SALE.—Eggs from my fine stock of single-comb Brown Leghorn fowls, winners of prizes at Cal. State Fair 1897, and Cal. State Poultry Ass'n Show 1897; E. S. Cumins, judge; score, 87 to 93½; and C. S. P. Show 1898; W. W. Browning, judge; score, 91½ to 94. Also from my prize-winning stock of Mammoth Bronze Turkeys, 1st and 2nd at C. S. Fair 1897, and 2nd at C. S. P. Show 1898. Pearl Guinea eggs \$1 per setting. M. B. Turkey eggs 25c each. S. C. Brown Leghorn eggs 50c and \$1 per setting of 13. All farm-raised fowls; large, hardy, fine. Write for wants to J. R. Catlett, Pleasant Grove, Cal.

BROWN LEGHORN Eggs from my winners at San Francisco, Oakland and Sacramento. \$2.50 per 15; \$4.50 per 30 L. W. Matthias, Sacramento, Cal.

MRS. J. G. FREDERICKS, Madison, Cal. Fresh Eggs in small or large lots at reasonable prices from choice Brown and Buff Leghorns, Black and White Minorcas.

SACRAMENTO POULTRY SUPPLY CO., 1025 J St., Sac'to. (Successor to Townsend & Co.) Manufacturers and dealers in Poultry Supplies. Constant agents Monitor Incubator (highest award World's Fair). Thoroughbred Poultry and Eggs. Catalogue free.

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SANTA TERESA POULTRY FARM, Eden Vale, Cal. Barred Plymouth Rocks, Black Minorcas, White Leghorns, Brown Leghorns. Fine Stock and Eggs for sale. Send for circular.

WILLIAM NILES & CO., Los Angeles, Cal. Nearly all varieties of Poultry, Dairy Cattle and Hogs.

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ELIAS GALLUP, Breeder of Poland China Hogs, Hanford, Kings Co., Cal.

BERKSHIRE AND POLAND-CHINA HOGS, Best Stock; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

J. P. ASHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Swine.

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J. B. HOYT, Bird's Landing, Cal. Importer and Breeder of Shropshire Sheep; also breeds Cross-bred Merino and Shropshire Sheep. Rams for sale. Prices to suit the times. Correspondence solicited.

Dogs.

MISS DELLA BEACH, San Jose, Cal. Breeder of Reg'd Thoroughbred Scotch Collie Shepherd Dogs.

RANCHO BENITO KENNELS. Thor'd Scotch Collies. Pups for sale. At stud, Imp. Ormskirk Blucher; fee \$35. Stewart & Son, Aromas, Cal.

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We keep all the leading varieties. Have 60 breeding yards. Why not improve your stock. Man's of the Improved Pacific Incubator. Absolutely self-regulating, hot water. Send stamp for our catalogue of incubators. Wire Netting, Blooded Fowls and Poultry Appliances generally. Remember the Best is the Cheapest. PACIFIC INCUBATOR CO., 1317 Castro St., Oakland, Cal.



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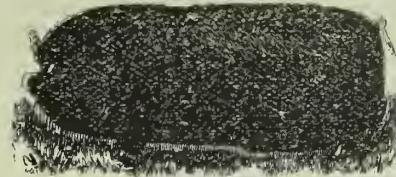


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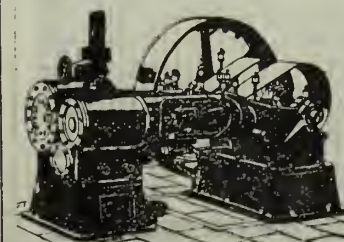
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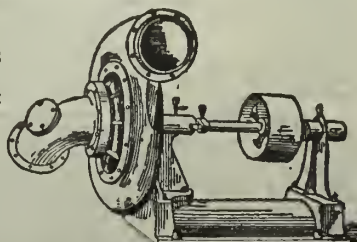
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625 Sixth Street.....San Francisco.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING MARCH 29, 1898.
601,331—CASH REGISTER—Bradt & Kindeberger, San Diego, Cal.
601,549—SPRING HEEL FOR BOOTS—J. Bresman, S. F.
601,550—TOWEL RACK—H. S. Broughton, Stayton, Or.
601,496—CARGO TRIMMER—J. C. Corwin, Tacoma, Wash.
601,431—FLOATING DOCK—J. J. Cousins, S. F.
601,316—LOCK—J. W. Dickson, Castle Rock, Wash.
601,242—CAR FENDER—G. W. Douglas, S. F.
601,338—METALLIC ALLOY—G. R. Evans, S. F.
601,561—CULTIVATOR—V. A. Gleason, So. River, side, Cal.
601,568—PACKING BOX—P. I. Jacoby, S. F.
601,257—GATE OPENER AND CLOSER—C. S. Jenkins, Los Angeles, Cal.
601,514—CAN SOLDERING MACHINE—A. Johnson, S. F.
601,444—STOVEPIPE COUPLING—A. E. Lotstrom, Spokane, Wash.
601,253—EMBROIDERY HOLDER—J. C. Orchard, Tacoma, Wash.
601,521—DREDGER—J. R. Parker, S. F.
601,380—CORK EXTRACTOR—C. F. Phillips, Los Angeles, Cal.
601,383—BIHLE WHEEL—W. C. Reuter, Walla Walla, Wash.
601,589—SAUCEPAN—A. Rochat, Golden Gate, Cal.
601,529—SHOE PROTECTOR—J. O. Sharpless, Fairhaven, Wash.
601,288—ROCK DRILL—J. P. Simmons, S. F.
601,605—INDEX PORTFOLIO—H. J. Weeks, Santa Barbara, Cal.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

FLOATING DOCK.—James J. Cousins, San Francisco, Cal. No. 601,431. Dated March 29, 1898. This invention relates to improvements in the construction of floating docks, such as are employed for docking vessels. It consists essentially in the novel construction and arrangement of compartments by which the dock is perfectly balanced and by which lifting pressure is directed to points in the vessel where the greatest weight lies, so that strains upon both dock and vessel are avoided. In conjunction with this is an arrangement and connection of the compartments and the pumps by which they are emptied, so that a portion of the compartments may be emptied by pump and another portion by the flow of the water therefrom by gravitation to reduce the cost and time, and by this means only as many compartments need be exhausted as are necessary to raise the particular size of vessel which may be upon the dock. This enables a dock which is capable of handling the largest vessel to be economically employed for the handling of small vessels.

DREDGING APPARATUS.—John R. Parker, Oakland, Cal., assignor to the Pacific Coast Dredging & Reclamation Co. of San Francisco, Cal. No. 601,524. Dated March 29, 1898. This invention relates to dredging apparatus, and it consists essentially of improvements in that portion of the apparatus by which the material is transferred from the plows or diggers which excavate it to a distant point where the dredged material is to be deposited. It also consists in a novel means for advancing the digging apparatus as fast as it is required for the purpose of excavating fresh ground. The object of the invention is to provide a means for connecting the rigidly supported conveying pipe with the corresponding rigid connection between said pipe and the digging or excavating mechanism in such a manner that the latter may be advanced as the necessities of the work require without the employment of any flexible sections in the conveying pipe. It consists also in the formation of a swivel joint between the two rigid pipe sections which will allow that portion connecting with the digging apparatus to be swung in an arc of a circle with relation to the joint, so as to excavate to any desired width.

A SLIGHT COLD, IF NEGLECTED, OFTEN ATTACKS THE LUNGS. "Brown's Bronchial Troches" give immediate and effectual relief.

A \$1 RAISIN SEEDER FOR 50 CTS. Post-paid.



We are tired of selling dealers and waiting 90 days for our money, so we will sell housekeepers at Jobbers' prices. Send 50 cents, and we will mail you postpaid one of our best Bay State Raisin Seeders. Guaranteed to seed 1 lb. of raisins in 5 minutes. Simple to operate and easy to clean.

Easton Specialty Mfg. Co., 64 Federal St., Boston.



Death To High Prices. We sell direct to the Farmer at Dealer's Prices. 16-in. Sulky Plows, \$25. 16-in. S. B. Plows, \$9. Rolling Coulters, extra, \$1.50. 64-T. Lever Harrow, \$7.50. Mowers, \$29.40. Riding Gang Plows, \$35. 12-16 Disc Harrow, \$16. Hay Rakes, \$11.65. 3-in. Wagon, \$39. Buggies, harness, Sewing Machines, Cider Mills, \$12.74. Corn Sheller, \$5. 8-Hoe Drill, \$29.40. 5-Hoe Drill, \$10.75. and 1000 other things at one-half dealer's prices. Catalog free. Hagood Plow Co., Box 117, Alton, Ill. The only Plow Factory in the U. S. selling direct to the consumer.

An Elgin watch always has the word "Elgin" on the works. Elgin National Watch Co., Elgin, Ill.

Coast Industrial Notes.

—F. G. Barnes' mill, in Silver Lake, Cowitz county, Wash., recently cut 79,000 shingles in one day.

—New gushers at Coalinga, Fresno Co., Cal., now give that district a daily petroleum product of 800 barrels.

—R. E. Russell, Mgr. Stockton and Tuolumne railroad, says the new railroad will be built to Sonora, Cal., before the end of '98.

—Track laying is finished on the Astoria and Columbia River railroad from Astoria, Or., to Goble, forty miles from Portland and sixty miles from Astoria.

—The Oriental Steamship Co. have ordered three vessels for the new line between Hongkong, Japan and San Francisco. One, to be called the America Maru, has a gross tonnage of 6000.

—The provision in the sundry civil bill appropriating \$400,000 for the construction of a deep water harbor at San Pedro, Cal., in accordance with the plans of the Board appointed by the President, was agreed to by the Senate on the 6th inst.

—The gap in the Rocky Mountain Bell Telephone Company's line between Herron, Mont., and Mullen, Idaho, 125 miles, is to be closed, making a continuous line from Livingstone, Mont., to San Francisco, the longest telephone connection in the world.

—The steamship Alameda, from Sydney via Auckland and Honolulu, recently brought \$2,000,000 in English sovereigns. This is a total since last fall of \$18,500,000, and is in payment for the balance of trade in favor of the Pacific coast for wheat, flour, lumber, canned goods, etc. Since Feb. 25, N. Y. City has imported \$25,000,000 gold from Europe.

—Americans who have taken a contract with Ecuador for building the railroad from Guayaquil to Quito are to get \$17,432,000. At the starting point, Quito, the track will be 9350 feet above the sea. Chimborazo will be crossed at an altitude of 12,300 feet, and there are other points where 11,800 and 11,980 feet are reached. The road will be 404 miles in length, at an average cost per mile of \$43,396 in gold.

—Congressman DeVries of California last week introduced a bill to enable the United States Government to expend for the improvement of the Sacramento and San Joaquin rivers the moneys appropriated by the State for this purpose, with a view to its incorporation in the next river and harbor bill and to enable the Government to use the \$300,000 appropriated by the State for the improvement of the lower Sacramento river.

—The Government report on coal production in the United States in 1897 shows that the value of the coal mined in twenty out of twenty-nine States was less by \$2,000,000 than the coal mined in 1896. Oregon is one of the States showing a decrease. California produced \$9,092 tons, valued at \$200,866, or \$2.25 a ton; Washington 1,434,112 tons, with a valuation of \$2,777,637, or \$1.94 a ton, and Oregon 100,311 tons, worth \$311,500, or \$3.11 a ton, the highest price in the country.

—Of Los Angeles oil territory, Prof. Strasburg tells the *Herald* that unless further local oil territory is developed soon the few remaining lots will all be drilled upon in the next thirty days, and present prices must advance. The amount of fuel oil above ground in the city of Los Angeles is in the neighborhood of 300,000 barrels, of which 225,000 barrels is in the market, with the present monthly consumption of fully 85,000 barrels. The production for the month of April should be about 90,000 barrels.



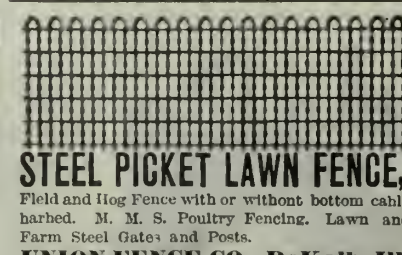
IF YOU COULD

buy a wagon that had everlasting wheels WOULD YOU DO IT? Wouldn't it be economy to do so? Well, here's how. Buy a set of **Electric Steel Wheels**. They can't dry out, and get loose, they CAN'T ROT OR BREAK DOWN. Don't make any difference what wagon you have, we can fit it. Wheels of any height and any width of tire. May be the wheels on your wagon are good. If they are true, A SET OF THESE will have two wagons—a low one and a high one. Send for catalogue, it is free. Electric Wheel Co., Box 10, Quincy, Ills.

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with an ornamental farm fence that costs no more than plain fence. Its name is **CYCLONE**. Our lawn fence and gates are the finest ever seen and very strong. Mind you: there is nothing "just as good." PATENTED 1894. PATENTED 1895.

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STEEL PICKET LAWN FENCE,
Field and Hog Fence with or without bottom cable barbed. M. M. S. Poultry Fencing. Lawn and Farm Steel Gates and Posts.
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WOMAN'S FATE.

From the Record, Bushnell, Ill.

No woman is better able to speak to others regarding "woman's fate" than Mrs. Jacob Weaver, of Bushnell, Ill., wife of ex-city marshal Weaver. She had entirely recovered from the illness which kept her bed-ridden much of the time for five or six years past, and says her recovery is due to that well known remedy Dr. Williams' Pink Pills.

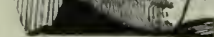
Mrs. Weaver is fifty-six years old, and has lived in Bushnell nearly thirty years. She is of unquestioned veracity and unblemished reputation. The story of her recovery is interesting. She says:

"I suffered for five or six years with the trouble that comes to women at this time of my life. I was much weakened, was unable much of the time to do my own work, and suffered beyond my power to describe. I was downhearted and melancholy.

"I took many different medicines, in fact I took medicine all the time, but nothing seemed to do me any good.

"I read about Dr. Williams' Pink Pills for Pale People, and some of my friends recommended them highly. I made up my mind to try them. I bought the first box in March, 1897, and was benefited from the start.

"A box and a half cured me completely, and I am now rugged and strong. I have not been bothered with my troubles since I began taking the pills. I have recommended the pills to Mrs. Jacob Weaver, many women who are suffering as I have suffered. They are the only thing that helped me in my trial that comes to so many women at my age."



Mrs. J. H. Weaver.

Subscribed and sworn to before me this 23d day of October, A. D. 1897.

O. C. Hicks, Notary Public.

When woman is passing beyond the age of motherhood, it is a crisis in her life. Then, if ever, proper attention to hygiene should be exercised. The attendant sufferings will disappear and buoyant health will follow if Dr. Williams' Pink Pills are used.

These pills exert a powerful influence in restoring the system to its proper condition. They contain in a condensed form all the elements necessary to give new life and richness to the blood.

'TIS FOR YOU.

RADAM'S MICROBE KILLER is a stimulant of the digestive functions and an intestinal antiseptic of incontestable therapeutic properties, free of drugs and poison. See reports of highest medical and scientific authorities. Drugs and poison fail; M. K. never fails. Bottle \$1.00. It will pay to investigate it. Call or write for complete proofs.

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PUMPS, AIR LIFTS, GASOLINE ENGINES
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can be raised at a profit, and the yield enlarged, if properly fertilized. Most fertilizers do not contain enough

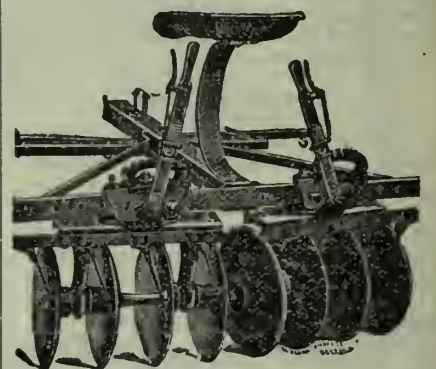
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Pacific Reversible Disc Harrow.

4-foot, 5-foot and 6-foot sizes in 16 or 20-inch discs. We guarantee that this Harrow can be more quickly reversed than any machine in the market. Our prices are a revelation. An extension can be furnished admitting of a space of between 5 and 6 feet between gangs. A center-cut device can be furnished, if desired.

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HAZARD POWDER.

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Clean, Strong
And Reliable.

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S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, April 13, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|-----------------|-----------------|
| Wednesday..... | \$1 06 @ 1 05 | 86% @ 84% |
| Thursday..... | 1 05 @ 1 05 1/2 | 84% @ 83 1/2 |
| *Friday..... | — | — |
| Saturday..... | 1 05 1/2 @ 1 06 | 85 @ 84 1/2 |
| Monday..... | 1 05 1/2 @ 1 06 | 83 1/2 @ 81 1/2 |
| Tuesday..... | 1 06 @ 1 07 | 83% @ 83 1/2 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|------------|------------|
| Wednesday..... | 7s 7 1/2 d | 7s 3 3/4 d |
| Thursday..... | 7s 7 d | 7s 3 3/4 d |
| *Friday..... | — | — |
| *Saturday..... | — | — |
| Monday..... | — | — |
| Tuesday..... | 7s 7 1/2 d | 7s 3 3/4 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|-----------------------|-----------------------|
| Thursday..... | \$1 53 1/2 @ 1 55 1/2 | \$1 44 1/2 @ 1 47 1/2 |
| *Friday..... | — | 1 47 1/2 @ 1 47 1/2 |
| Saturday..... | 1 56 @ 1 59 | 1 48 @ 1 50 1/2 |
| Monday..... | 1 59 1/2 @ 1 61 1/2 | 1 55 @ 1 58 1/2 |
| Tuesday..... | 1 60 @ 1 57 | 1 57 @ 1 55 1/2 |
| Wednesday..... | 1 58 1/2 @ 1 58 1/2 | 1 56 1/2 @ 1 58 1/2 |

Wheat.

The wheat market in this center is decidedly higher than a week ago, quotations having been marked up on milling wheat about 10c per cental or \$2 per ton, but values in the open market were poorly defined, owing to very few transactions. The speculative market was the scene of most of the business, and values on Call Board took some rapid jumps upward, due to weather being dry all the week and hot part of the time. May wheat advanced about 8c within the week and December about 14c, although at this writing (Wednesday) the Call Board is not quite so stiff for May wheat as it was two days ago. Asking rates for actual wheat were moved up in keeping with Call Board figures, but exporters were unable to do anything, and purchasing on local account was insignificant. In Chicago the improvement in May wheat was not over 3c per bushel for the week, while prices for later deliveries showed less appreciation. In Liverpool the week's gain in options did not exceed 3c per cental. It is not remarkable under the conditions above noted that export business here was stagnant, particularly with little or no chance for relief from ocean freights, as the latter are now down close to the lowest figures on record.

That the season of 1897-'98 will go on record as a dry one is now an established fact. In addition to the dryness, there was some hot and forcing weather the current week which was anything but desirable for most localities. The gap between the views of buyers and sellers as to values has been steadily widening for some weeks past, with the difference more marked since last review than at any previous date the current season. The export business in wheat has been slow since the beginning of the year—in fact, since November—but present indications are the outward movement will be much lighter during the next sixty or ninety days than for any two or three months in the past five. At this writing only four wheat ships have cleared from this port since April 1st, and if there is no improvement during the next two weeks, the wheat shipments for April will be smaller in the aggregate than for any previous month since last July. There are only seven ships now on the engaged list for wheat, and no demand for vessels for grain loading, despite the fact that ocean freight rates are at such low figures that they cannot afford any profit to ship owners. The latest reported engagement in the wheat-carrying trade was the recharter of an iron-harvey at 18s 9d net (\$4.50) per long ton of 2240 pounds to Cork, U. K., for orders, usual option as to final destination. A year ago the engaged list of wheat ships was also very light and freight rates were quite low, but it was the result of weakness in foreign markets, and not on account of scarcity of wheat here or high local values.

| | |
|-------------------------------------|---------------|
| California Milling..... | \$1 65 @ 1 70 |
| Cal. No. 1 shipping, alongside..... | 1 55 @ |
| Oregon Valley..... | 1 55 @ 1 60 |
| Walla Walla Blue Stem..... | 1 55 @ 1 65 |
| Walla Walla Club..... | 1 50 @ 1 60 |

CALL BOARD PRICES.

On San Francisco Call Board prices for No 1 white wheat per cental for the week were as follows for the options named:

| |
|--|
| May, 1898, delivery, \$1.53% @ 1.61 1/2. |
| December, 1898, delivery, \$1.44% @ 1.58%. |
| Wednesday, at regular noon session of Call Board, May wheat sold at \$1.58% @ 1.58 1/2%. |
| December, 1898, \$1.56% @ 1.58%. |

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|-------------------|-------------------|
| Liv. quotations..... | 5s10 1/2 d @ 8 d | 7s10 d @ 7s11 d |
| Freight rates..... | 17 1/2 @—s | 18 1/2 @—s |
| Local market..... | \$1.22 1/2 @ 1.25 | \$1.55 @ 1.57 1/2 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

A rather firm market has been experienced for flour the current week, card rates being again advanced 25c per barrel, but actual values were not up to the quotations given out by most of the local millers, neither were selling prices as high as were justified by current asking rates for choice to select milling wheat, more especially if the stiff and middlings were not taken into consideration.

Superfine, lower grades.....\$3 50 @ 3 65
Superfine, good to choice.....3 75 @ 4 00
Country grades, extras.....4 75 @ 5 00
Choice and extra choice.....5 00 @ 5 15
Fancy brands, jobbing.....5 15 @ 5 35
Oregon, Bakers' extra.....4 65 @ 4 90
Walla Walla, Bakers' extra.....4 65 @ 4 90

Barley.

Values for this cereal have taken some big strides upward since last issue, with an excited speculative market, wherein most of the trading was done. Call Board prices advanced fully 10c per cental during the three days ending with Saturday last. On Monday of this week, with hot and dry weather here and in the interior, there was a further advance in prices of options, amounting to 8@9c for the day, and making a sorry time for those who were still short on the market through transactions of previous week. When it is remembered that a fluctuation of 19c, as above cited, means a profit or loss, exclusive of brokerage charges, of \$380 per contract of 100 tons, and that this appreciation was developed in less than a week, some idea can be formed of the uneasiness and anxiety of those who had their money up and were taking their chances on the market. A fluctuation of 10c on Call Board either wipes out the original capital deposited, or doubles the investment, less the brokerage fees. The fluctuations in the prices of options on Tuesday and Wednesday were less pronounced, but the market continued to present a strong tone. Business in the spot or sample market was insignificant, compared with speculative trading mostly in December option. As to values of actual barley, the views of sellers and buyers were too much at variance most of the time to admit of any great amount of trading.

| | |
|---------------------------------|-----------------|
| Feed, No. 1 to choice..... | 1 40 @ 1 42 1/2 |
| Feed, fair to good..... | 1 37 1/2 @ 1 40 |
| Brewing, No. 1 to choice..... | 1 45 @ 1 50 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

| |
|--|
| May, 1898, delivery, \$1.36 @ 1.45. |
| December, 1898, delivery, \$1.29% @ 1.43. |
| Wednesday at regular noon session of the Call Board May, 1898, feed sold at — @ —. |
| Dec., 1898, \$1.40 @ 1.39 1/2. |

Oats.

Higher prices are current than last quoted for all descriptions of feed and milling oats, with market tolerably stiff at the advanced figures. There are fair arrivals of this cereal, mainly from Oregon and Washington, but with barley in light stock and high, the demand for oats has shown improvement. Oats have not advanced as sharply as barley, and are now relatively the cheaper of the two cereals.

| | |
|-------------------------------|---------------------|
| White Oats, fancy feed..... | 1 42 1/2 @ 1 47 1/2 |
| White, good to choice..... | 1 37 1/2 @ 1 40 |
| White, poor to fair..... | 1 30 @ 1 35 |
| Gray, common to choice..... | 1 30 @ 1 40 |
| Milling..... | 1 35 @ 1 40 |
| Surprise, good to choice..... | 1 40 @ 1 47 1/2 |
| Black Russian..... | — @ — |
| Red..... | — @ — |

Corn.

The tendency of the market has been in favor of the selling interest, owing to the comparatively stiff figures ruling on other feed cereals. Firmness was most marked on Small Yellow, which is used mainly as chicken feed in place of wheat. Receipts and offerings were not heavy of any description.

| | |
|----------------------------------|-----------------|
| Large White, good to choice..... | 1 15 @ 1 17 1/2 |
| Large Yellow..... | 1 15 @ 1 17 1/2 |
| Small Yellow..... | 1 25 @ 1 27 1/2 |
| Eastern Yellow..... | 1 15 @ 1 17 1/2 |
| Egyptian White..... | — @ — |
| Popcorn, shelled, # 1..... | — @ — |

Rye.

Advanced figures are being asked, with spot supplies light and in few hands. The demand is not active, however, at full current rates.

| | |
|--------------------------|-------------|
| Good to choice, new..... | 1 35 @ 1 40 |
|--------------------------|-------------|

Buckwheat.

Very little of this cereal is offering, and values are in consequence poorly defined. Quotations are based on latest reported transactions.

| | |
|---------------------|-------------|
| Good to choice..... | 1 80 @ 1 90 |
| Silverskin..... | — @ — |

Beans.

Market is firmer throughout than at date of former review, partly due to poor prospects for coming crop, but in a great degree owing to a revival of demand. The inquiry was partly speculative on account of local operators, but was largely the result of increased shipping demand, orders being received from the North, South and East. Some holdings were kept off the market, owners anticipating still better figures later on. With anything like a fair export business in the near future, it would seem as though values must further stiffen.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 50 @ 1 60 |
| Small White, good to choice..... | 1 50 @ 1 60 |
| Lady Washington..... | 1 50 @ 1 60 |
| Butter, small..... | 1 45 @ 1 55 |
| Butter, large..... | 1 60 @ 1 75 |
| Pinks..... | 2 35 @ 2 60 |
| Bayos, good to choice..... | 2 85 @ 3 00 |
| Reds..... | 2 15 @ 2 30 |
| Red Kidneys..... | 2 25 @ 2 40 |
| Limas, good to choice..... | 2 25 @ 2 40 |
| Black-eye Beans..... | 2 60 @ 2 80 |
| Horse Beans..... | 1 90 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

Late mail advices from New York furnish the following concerning the bean market in that center, prices quoted being per bushel of 60 lbs.:

It has required quite a struggle to maintain the price of Marrow beans, and at times the market has shown weakness. Demand has been rather poor, and the bulk of the sales to home jobbers

was at \$1.37 1/2, with useful lots going at \$1.35. A few of the favorite brands have been held at \$1.40, and that figure has been cabled by exporters without drawing important orders. Pea have suffered a considerable decline under large supplies and rather strong pressure to sell; occasional small sales are still making at \$1.02 1/2, but most of the recent wholesale business has been at \$1. Medium have been dragged down by the drop in Pea, but toward the close some buyers have shown a little more interest and the sale of two cars for export at \$1.05 has tended to steady the feeling. Red Kidney have had just enough call to keep the market firm on the basis of \$1.70 for choicest stock; some pretty good lots have sold to dealers at 5@10c less. White Kidney in small supply and doing a little better. Turtle Soup have also shown firmness under some speculative inquiry. Demand for Yellow Eye still very light. Lima showed weakness for a few days and some round lots sold down to \$1.42 1/2; later some speculative business developed with a firmer feeling at the close, and \$1.45 @ 1.50 asked. Green peas have had an uncommonly dull trade, both on home and foreign account, and under pressure to unload stock that has accumulated on the docks, prices are low and unsettled.

Dried Peas.

Values remain in about same position as last quoted. Offerings and demand are both light, however, and the inquiry which exists is almost wholly for best qualities.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 90 @ 2 10 |
| Niles Peas..... | 1 60 @ 1 75 |

Wool.

There is no change to record in the condition of the local wool market. Spring wools have arrived in moderate quantity, aggregating to date about 7000 bags, while a year ago at corresponding date fully double the above quantity had been received. Nothing has yet been done in this season's clip and values for the same remain consequently wholly undefined. Some Eastern manufacturers and dealers are expected to put in an appearance in a few weeks.

| | SPRING. | FALL. |
|-----------------------------------|---------|---------|
| Oregon Eastern, choice..... | 12 @ 14 | 10 @ 11 |
| Oregon Eastern, fair to good..... | 10 @ 11 | 9 @ 12 |

| | FALL. |
|------------------------|---------|
| Northern, free..... | 11 @ 13 |
| Southern Mountain..... | 9 @ 12 |

Hops.

Market is ruling very quiet, and while it can hardly be termed quotably lower, it is wholly devoid of firmness. Free sales could not be effected at this date without granting decided concessions to buyers. Fortunately for the producing interest, there are not many hops now remaining in first hands.

| | |
|--------------------------------|---------|
| Good to choice, 1897 crop..... | 11 @ 14 |
|--------------------------------|---------|

A New York authority reviews the hop market under recent date as follows:

Conditions are much the same as they have been for the past month, but values have been receding slowly under the depressing influence of sluggish and unsatisfactory trade. Several lots of hops have been moved this week from the warehouses to the breweries, but the deliveries were very largely on old business. New purchases are few and generally small, most of the brewers giving evidence of fair stocks which they are inclined to work off this season and start a new deal on the 1898 crop. At any rate, the small sales that are now making are at quite irregular rates, and we again revise quotations to more nearly represent the prices at which goods can be bought. Further considerable lots of Pacifics have arrived in transit for export, but foreign advices are not very encouraging just now, and shippers are making very few purchases. In this State farmers have commenced to work in the yards, and we get no reports of winter killing.

Hay and Straw.

Market for hay has continued strong, with further moderate appreciation in quotable rates, more particularly on the lower and middle grades, these now receiving more attention than ordinarily, owing to the high figures current on choice to select. That present extreme prices will long remain current is not probable, as in a few weeks new hay will likely be landed here from outside points at lower figures than are now established for old hay.

| | |
|--------------------|---------------|
| Wheat..... | 20 00 @ 24 00 |
| Wheat and Oat..... | 18 00 @ 23 00 |
| Oat..... | 17 00 @ 21 00 |
| Barley..... | — @ — |
| Clover..... | — @ — |
| Stock Hay..... | 12 00 @ 14 00 |
| Alfalfa..... | 12 00 @ 14 00 |
| Compressed..... | 30 00 @ 24 00 |
| Straw, # bale..... | 40 @ 50 |

Millstuffs.

Further advances have been quoted in values of most descriptions. Market was particularly strong for Rolled Barley and Bran, with demand fairly brisk and no large supplies of either sort.

| | |
|---------------------|---------------|
| Bran, # ton..... | 21 00 @ 22 00 |
| Middlings..... | 23 00 @ 25 00 |
| Barley, Rolled..... | 29 50 @ 30 00 |
| Cornmeal..... | 25 00 @ — |
| Cracked Corn..... | 25 50 @ 26 00 |

Seeds.

Business is slow in this department at present and is likely to continue so during the remainder of the season. There are no heavy stocks of any variety, and no likelihood of supplies of any kind being particularly cumbersome for some months to come. Alfalfa is in poor request, with market weak. Most of this seed now in stock will have to be carried into next season. Values for other seeds remain nominally as last stated.

| | Per ctl. |
|----------------------------|---------------|
| Mustard, Yellow..... | 2 75 @ 3 00 |
| Mustard, Trieste Seed..... | 2 90 @ 3 10 |
| Mustard, Wild Brown..... | 2 00 @ 2 25 |
| Flax..... | 2 25 @ 2 40 |
| | Per lb. |
| Canary..... | 2 1/2 @ 2 3/4 |
| Rape..... | 2 1/2 @ 2 3/4 |
| Hemp..... | 3 1/2 @ 3 3/4 |
| Alfalfa, Utah..... | 5 1/2 @ 6 |

Bags and Bagging.

There are no signs of life in the grain bag market, and not likely to be for some weeks to come. The outlook this season for those in the grain bag trade is certainly not encouraging. Large quantities of bags will undoubtedly have to be carried over into next year.

In wool sacks there is a little business doing within range of values previously quoted.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, buyer July..... | — @ — |
| Calcutta Grain bags, 22x36, spot..... | 5 1/2 @ 5 3/4 |
| State Prison bags, per 100..... | 5 30 @ — |
| Wool sacks, 4 lb..... | 18 @ 20 |
| Wool sacks, 3 1/2 lb..... | 27 @ — |
| Gunnies..... | 10 @ — |
| Bean bags..... | 4 1/2 @ 4 3/4 |
| Fruit sacks, cotton..... | 5 1/2 @ 6 1/4 |

Hides, Pelts and Tallow.

No changes of noteworthy importance have occurred the current week in either quotable values or the general condition of the market for Hides, Pelts and Tallow. Market was in the main quiet and for most descriptions of Hides and Pelts presented an easy tone. Values for Tallow ruled fairly steady.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|-------------|
| Heavy Steers, over 56 lbs..... | — @ 10 | — @ 9 |
| Medium Steers, 48 to 56 lbs..... | — @ 9 | — @ 8 |
| Light Steers, under 48 lbs..... | — @ 9 | — @ 8 |
| Heavy Cow Hides, over 50 lbs..... | — @ 9 | — @ 8 |
| Light Cow Hides, under 50 lbs..... | — @ 9 | — @ 8 |
| Wet Salted Kip..... | — @ 9 1/2 | — @ 8 1/2 |
| Wet Salted Veal..... | — @ 10 | — @ 9 |
| Wet Salted Calf..... | — @ 10 | — @ 9 |
| Dry Hides..... | — @ 16 1/2 | 13 @ 13 1/2 |
| Dry Kip and Veal, 11 to 16 lbs..... | 16 @ 16 1/2 | — @ 12 |
| Dry Calf, under 4 lbs..... | 18 @ 20 | 16 @ 17 |
| Horse Hides, large..... | 2 25 @ 2 75 | 2 00 @ 2 25 |
| Horse Hides, medium..... | 25 @ 25 | 25 @ 25 |
| Horse Hides, small..... | 25 @ 25 | 25 @ 25 |
| Colts' Hides..... | 25 @ 25 | 25 @ 25 |
| Pelts, long wool, per skin..... | 90 @ 1 15 | 70 @ 90 |
| Pelts, medium, per skin..... | 40 @ 60 | 40 @ 60 |
| Pelts, short wool, per skin..... | 15 @ 30 | 15 @ 30 |
| Pelts, shearing, per skin..... | 25 @ 30 | 25 @ 30 |
| Deer Skins, best summer..... | — @ 20 | — @ 20 |
| Deer Skins, good medium..... | — @ 20 | — @ 20 |
| Deer Skins, thin winter..... | — @ 10 | — @ 10 |
| Elk Hides..... | — @ 10 | — @ 10 |
| Tallow, good quality..... | 3 @ 3 1/2 | 2 @ 2 1/2 |
| Tallow, No. 2..... | 2 @ 2 1/2 | 2 @ 2 1/2 |
| Goat Skins, perfect..... | 30 @ 34 | 30 @ 34 |
| Goat Skins, damaged..... | 10 @ 20 | 10 @ 20 |
| Kid Skins..... | 5 @ 10 | 5 @ 10 |

Honey.

Market is as strong as previously noted and is not likely to develop any weakness in the near future. Spot stocks of Extracted are nearly exhausted and Comb honey is not now offering in very heavy quantity. The coming crop promises to be the lightest in this State for a long time. Eastern markets are firm, but are not as favorable to sell as is the local market. The relief is entertained by dealers East that there is plenty of honey still left on this coast, but that it is being held above current rates. These dealers will doubtless come to a realization, later in the season, that they have made a mistake in their calculations.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 5 1/2 @ 6 |
| Extracted, Light Amber..... | 4 1/2 @ 5 1/4 |
| White Comb, 1-lb frames..... | 8 1/2 @ 10 |
| Amber Comb..... | 6 1/2 @ 7 1/4 |

Beeswax.

Supplies are of light volume and market is firm at quotations. In the filling of small orders, higher prices than are quoted are being realized.

| | |
|---------------------------|---------|
| Fair to choice, # lb..... | 24 @ 27 |
|---------------------------|---------|

Live Stock and Meats.

Beef of a desirable quality is not in excessive receipt, and choice to select commands about as firm figures as for some time past. Mutton market has a weaker feeling, unless for strictly select, the latter selling to fair advantage. Common qualities incline in favor of the buyer, with heavy offerings of the latter sort, owing to the scarcity of feed. Hog market is showing a little more activity than for a week or two preceding, but there is no improvement in quotable values, and only choice hard grain fed hogs are inquired for.

| | |
|---|---------------|
| Beef, 1st quality, dressed, net # lb..... | 6 1/2 @ — |
| Beef, 2d quality..... | 5 1/2 @ 6 |
| Beef, 3d quality..... | 4 @ 5 |
| Mutton—ewes, 8@—c; wethers..... | 8 1/2 @ — |
| Hogs, hard grain fed, medium..... | 4 @ — |
| Hogs, small..... | 3 @ 3 1/2 |
| Hogs, large hard..... | 3 1/2 @ 3 3/4 |
| Hogs, soft and feeders..... | 3 1/2 @ 3 |
| Hogs, country dressed..... | 4 1/2 @ 4 3/4 |
| Veal, small, # lb..... | 6 @ 7 1/2 |
| Veal, large, # lb..... | 6 1/2 @ 7 |
| Lamb, Yearling, # lb..... | 8 1/2 @ — |
| Lamb, Spring, # lb..... | 9 @ — |

Poultry.

There was no lack of demand for choice poultry, both young and old, and such brought as a rule tolerably good prices. Poor old stock moved slowly, however, and had to go at low figures. Very small young stock was not sought after, especially if thin, which it was in most instances. While latter dragged at inside quotations, some of large size and of very superior quality brought an advance on the highest figures below noted.

| | |
|------------------------------------|-------------|
| Turkeys, dressed, # lb..... | — @ — |
| Turkeys, live hens, # lb..... | 12 1/2 @ 13 |
| Turkeys, live gobblers..... | 11 @ 12 |
| Hens, Cal., # doz..... | 4 00 @ 5 00 |
| Roosters, old..... | 3 75 @ 4 00 |
| Roosters, young, (full-grown)..... | 8 00 @ 8 50 |
| Fryers..... | 6 50 @ 7 00 |
| Broilers, large..... | 4 00 @ 5 00 |
| Broilers, small..... | 2 50 @ 3 50 |
| Ducks, young, # doz..... | 6 00 @ 7 00 |
| Ducks, old..... | 3 50 @ 4 50 |
| Geese, # pair..... | 1 25 @ 1 50 |
| Goslings, # pair..... | 2 00 @ 2 50 |
| Pigeons, Old, # doz..... | 1 25 @ — |
| Pigeons Young..... | 1 50 @ 1 75 |

Butter.

| | | | |
|-------------------------------------|----|---|--------|
| Creamery seconds..... | 18 | @ | — |
| Dairy select..... | 18 | @ | — |
| Dairy second..... | 17 | @ | — |
| Dairy, soft and weedy..... | 15 | @ | — |
| Mixed store..... | 15 | @ | 16 |
| Creamery in tubs..... | 19 | @ | 20 |
| Pickled roll..... | — | @ | — |
| Dairy in tubs..... | — | @ | — |
| Firkin, Cal., choice to select..... | 18 | @ | 20 |
| Firkin, common to fair..... | 16 | @ | 17 1/2 |

Cheese.

Market is fully as firm as last quoted, with prospects more favorable for an advance than for a decline in the near future. Supplies now in store are not large of any description, and a very good demand is being experienced at the rates prevailing.

| | | | |
|-----------------------------------|-------|---|--------|
| California fancy flat, new..... | 9 1/2 | @ | 10 |
| California, good to choice..... | 9 | @ | 9 1/2 |
| California, fair to good..... | 8 | @ | 8 1/2 |
| California Cheddar..... | 9 1/2 | @ | 10 1/2 |
| California, "Young Americas"..... | 9 1/2 | @ | 10 1/2 |

Eggs.

Trade in eggs has been lighter than for a week or two preceding and market presents an easier tone. There is almost invariably a full immediately after Easter, this year proving no exception. The extra requirements for Easter are generally anticipated by previous liberal purchasing, retailers as a rule securing more than they actually need. Some of the large consumers have recently stocked up with Eastern eggs, and this has materially curtailed the demand for home product.

| | | | |
|---|--------|---|--------|
| California, select, large white and fresh..... | 14 1/2 | @ | — |
| California, select, irregular color & size..... | 13 1/2 | @ | 14 |
| California, good to choice store..... | 12 1/2 | @ | 13 |
| California, common to fair store..... | — | @ | — |
| Oregon, prime..... | — | @ | — |
| Held Eastern, as to section and grading..... | 12 1/2 | @ | 13 1/2 |
| Local Cold storage eggs..... | — | @ | — |

Vegetables.

Early spring vegetables were not in heavy receipt, although there was a moderate increase in supplies of most kinds now offering, notably of Peas, Rhubarb and Asparagus. Changes effected in quotable values were in the main to lower figures. Onions were more firmly held, being in light supply and included very few California. Present stocks are made up mainly of receipts from Australia, Oregon and Nevada.

| | | | | | |
|--|--------|----|----|----|----|
| Asparagus, No. 1 to choice, # box..... | 1 | 25 | @ | 1 | 75 |
| Asparagus, common to fair, # box..... | 65 | @ | 1 | 00 | |
| Beans, String, # lb..... | — | @ | — | — | |
| Beans, Lima, # lb..... | — | @ | — | — | |
| Beans, Refugee, # lb..... | — | @ | — | — | |
| Beans, Wax, # lb..... | — | @ | — | — | |
| Cabbage, choice garden, # 100..... | 65 | @ | 75 | | |
| Caiflower, # doz..... | 50 | @ | — | | |
| Corn, Green, # sack..... | — | @ | — | — | |
| Corn, Alameda, # crate..... | — | @ | — | — | |
| Cucumbers, hot house, # doz..... | 50 | @ | 1 | 00 | |
| Egg Plant, # lb..... | — | @ | — | — | |
| Garlic, # lb..... | — | @ | — | — | |
| Mushrooms, Buttons, # lb..... | 20 | @ | — | | |
| Mushrooms, Wild, # lb..... | 10 | @ | 15 | | |
| Okra, Dried, # lb..... | 12 1/2 | @ | 15 | | |
| Onions, Yellow, good to choice..... | 2 | 50 | @ | 3 | 00 |
| Onions, Yellow, cut..... | 1 | 50 | @ | 2 | 00 |
| Peas, Sweet, Garden, # lb..... | 14 1/2 | @ | 2 | | |
| Peppers, Green Chile, # lb..... | 25 | @ | 30 | | |
| Rhubarb, ordinary, # box..... | 25 | @ | 65 | | |
| Rhubarb, Mammoth, # bx..... | 90 | @ | 1 | 00 | |
| Squash, Summer, # lb..... | — | @ | — | — | |
| Tomatoes, # box or crate..... | 1 | 50 | @ | 2 | 00 |

Potatoes.

Market for potatoes kept tolerably close to the lines of previous week, but for other than choice to select table qualities of Burbank Seedlings the tendency was in favor of the buyers, the demand for ordinary qualities lacking activity. Most of the potatoes now coming forward are from Oregon. New are arriving in moderate quantity, but are rather common quality as a rule and suitable only for local use.

| | | | |
|--|-------|---|------|
| Early Rose, River, # cental..... | 60 | @ | 70 |
| Peerless, River..... | — | @ | — |
| Reds River..... | 50 | @ | 60 |
| Garnet Chile, Mission..... | — | @ | — |
| Burbanks, Salinas..... | 75 | @ | 1 15 |
| Burbanks, River, # sack..... | 50 | @ | 65 |
| Burbanks, Petaluma and Tomales, # cti..... | 50 | @ | 65 |
| Burbanks, Humboldt, # cti..... | 50 | @ | 75 |
| Burbanks, Oregon, # cental..... | 55 | @ | 90 |
| Garnet Chile, Oregon..... | — | @ | — |
| New Potatoes, # lb..... | 1 1/2 | @ | 2 |
| Sweet River, # cental..... | — | @ | — |
| Sweet Merced..... | 75 | @ | 1 00 |

The Fruit Market.

Fresh Fruits.

Market is fairly stocked with apples of 1897 crop, although supplies are on the decrease. Offerings are mainly of only fair to medium quality, and values for this description remain about as low as previously quoted, with demand slow for common sorts, even at low figures. Most of the best looking Apples now on market have been in cold storage, but nearly all this fruit shows poor keeping qualities, not being able to stand much exposure, which is to be expected. A few very select apples, such as fancy Yellow Newton Pippins, four tiers to the box, would sell well and command slightly higher figures than below noted, but such are virtually out of the market. It is among the probabilities that new apples will be offering in about thirty days. Strawberries are still in rather limited supply, but arrivals are on the increase and the quality is showing improvement, while prices are on the decline. In about a week it is probable that offerings of berries will be sufficiently liberal to admit of wholesale operations.

| | | | | | |
|--|----|----|----|----|----|
| Apples, fancy, 4-tier, # box..... | 1 | 25 | @ | 1 | 40 |
| Apples, choice, 4-tier, # box..... | 75 | @ | 1 | 00 | |
| Apples, fair to good, 50-lb box..... | 50 | @ | 75 | | |
| Apples, common to fair, # box..... | 25 | @ | 50 | | |
| Strawberries, Longworth, # drawer..... | 75 | @ | 1 | 00 | |
| Strawberries, Large, # drawer..... | 65 | @ | 90 | | |

Dried Fruits.

While probably as much business has been transacted in this center, since our last issue, in the market for cured and evaporated fruits, as during preceding week, transactions have been, in the main, on more conservative lines than were most of the transfers immediately

prior to last review. The business of the previous week was mainly on local speculative account and largely in apricots. This week's trade has been confined more to the filling of orders for various kinds for immediate local requirements or for shipment to outside points. Naturally, the market has presented a more quiet appearance. Apricots are not quotably lower; in fact, there are no large quantities to be had at any figure. Supplies will be light and prices will likely be high the coming season. Peaches are being very steadily held, but as this fruit is quite extensively grown throughout the United States, values are not apt to rule particularly high on account of any local scarcity. Pears, plums and prunes of approaching crop are almost certain to afford liberal quantities for export. There are few pears or plums now on market. Prunes are still in fair supply. Values for all three varieties last cited are quotably unchanged. Shipments of dried fruit for the week include 42,926 pounds for Victoria, B. C., and 15,225 pounds for Siberia.

EVAPORATED OR BLEACHED.

| | | | |
|--|-------|---|-------|
| Apricots, Royal, in sacks, per lb..... | 6 | @ | 7 |
| Apricots, Royal, fancy..... | 7 1/2 | @ | 8 1/2 |
| Apricots, Moorpark..... | 8 | @ | 10 |
| Apples, in boxes..... | 6 1/2 | @ | 6 3/4 |
| Figs, fancy pressed..... | 8 | @ | 10 |
| Nectarines, White..... | 4 1/2 | @ | 5 |
| Nectarines, Red..... | 4 1/2 | @ | 5 |
| Peaches, unpeeled, choice..... | 4 | @ | 4 1/2 |
| Peaches, unpeeled, fancy..... | 5 | @ | 6 |
| Peaches, peeled, in boxes..... | 9 | @ | 12 |
| Pears, unpeeled Bartlett's, halved, fancy..... | 7 | @ | — |
| Pears, halved, unpeeled Bartlett's..... | 4 1/2 | @ | 6 |
| Pears, quartered, unpeeled Bartlett's..... | 4 | @ | 5 |
| Plums, peeled and sliced..... | 4 1/2 | @ | 5 1/2 |
| Prunes, in sacks, 40-50's..... | 4 1/2 | @ | 5 |

50-60's..... 3 @ 3 1/2
60-70's..... 2 1/2 @ 2 3/4
70-80's..... 2 1/2 @ 2 3/4
80-90's..... 2 @ 2 1/2
90-100's..... 1 1/2 @ 2
Above figures are on basis of 2 1/2 @ 2 1/2 c for 4 sizes. Prunes in boxes, 1/2 c higher for 25-lb boxes, 1/4 c higher for 50-lb boxes.

| | | | |
|---------------------------------------|-------|---|---|
| 4 sizes Santa Claras and equal..... | 2 1/2 | @ | — |
| 4 sizes San Joaquin and Northern..... | 2 1/2 | @ | — |
| Prunes, Silver..... | 5 | @ | 8 |

COMMON SUN-DRIED.

| | | | |
|-------------------------|-------|---|-------|
| Apricots, ordinary..... | 5 | @ | 6 |
| Apples, sliced..... | 4 1/2 | @ | 5 |
| Apples, quartered..... | — | @ | — |
| Figs, Black..... | 2 | @ | 3 1/2 |
| Figs, White..... | 3 | @ | 4 |
| Peaches, unpeeled..... | 3 1/2 | @ | 4 |
| Plums, unpeeled..... | 1 | @ | 1 1/2 |

The dried fruit market on the Atlantic side is thus outlined in a recent New York review:

Both the export and jobbing demand for evaporated apples have been very satisfactory this week and market has been well sustained. Exporters have given most attention to prime and grades below, though they have taken a few choice to fancy. Prime have ranged from 8 1/2 @ 8 3/4 c, latter figure extreme, though obtainable for high grade wood-dried, and choice to extra fancy have sold in range of 8 1/2 @ 10 c, though latter figure is exceptional and only realized in a very small way. Not much doing in sun-dried apples, but offerings moderate, and desirable grades held with considerable confidence about late prices. Chops have shown some improvement, and, while it is generally asked, it is rather extreme. Corns and skins steady at former prices. About all kinds of small fruits have continued in light supply and without important change. Cherries in few hands and generally held higher than quoted. Raspberries have had small jobbing sales at 10 1/2 @ 11 c, though 10 c is all that can be realized for important lines, and some stock in the interior would probably be cleaned up for less. Blackberries steady. Huckleberries unchanged. California fruit has met a fairly active demand and tone is firm, especially for apricots.

| | | | |
|--|-------|---|-------|
| Apricots, Cal. Moorpark, 1897, per lb..... | 8 | @ | 12 |
| Apricots, Cal. Royal, 1897, per lb..... | 5 1/2 | @ | 8 1/2 |
| Peaches, Cal., 1897, peeled, per lb..... | 10 | @ | 16 |
| Peaches, Cal., 1897, unpeeled, per lb..... | 5 | @ | 9 |
| Pears, Cal., 1897, per lb..... | 5 | @ | 10 |
| Prunes, Cal., 1897, per lb..... | 3 | @ | 8 |

Raisins.

The raisin market is not showing any activity, and absence of firmness is a prominent feature. There is little or no inquiry from any quarter at present, and poor stock is being crowded for custom at such irregular and in the main such ridiculously low figures that there is virtually nothing upon which to base values for prime qualities, aside from the views of holders. Raisins showing quality in every way desirable are not in heavy supply.

F. O. B. FRESNO DELIVERY.

| | | | |
|--------------------------------------|---|----|-----|
| Imperial Clusters, per box..... | — | @ | — |
| Dehesa Clusters, per box..... | — | @ | — |
| Fancy Clusters, per box..... | — | @ | — |
| Boxes, London layers, 20-lb box..... | 1 | 00 | @ — |

(Usual advance for fractions.)

(Usual advance for fractions.)

| | | | |
|------------------------------------|-------|---|-------|
| Loose Muscatel, 4-crown, # lb..... | 3 1/2 | @ | — |
| Loose Muscatel, 3-crown..... | 2 1/2 | @ | 3 1/2 |
| Loose Muscatel, 2-crown..... | 1 1/2 | @ | 1 1/2 |
| Sultanas..... | 3 | @ | 3 1/2 |
| Seedless Muscatel..... | 1 1/2 | @ | — |
| Dried Grapes..... | 1 | @ | 1 1/2 |

Citrus Fruits.

Oranges were in somewhat lighter receipt than previous weeks, and with weather warm most of the time, the demand showed improvement, causing the market to rule firmer for best qualities, but the more common sorts remained about as cheap as last quoted, with little competition among buyers for the latter kind. Lemon market was a little firmer and a little more active for choice to select, but otherwise was without improvement, common qualities continuing plentiful and in poor request. Limes met with improved inquiry but were not quotably higher.

| | | | | | |
|---------------------------------|----|----|---|----|----|
| Oranges—Navel # box..... | 1 | 25 | @ | 2 | 25 |
| St. Michaels..... | 1 | 00 | @ | 1 | 50 |
| Seedlings..... | 50 | @ | 1 | 20 | |
| Lemons—Cal., select, # box..... | 1 | 50 | @ | 1 | 75 |
| Cal., good to choice..... | 1 | 00 | @ | 1 | 25 |
| Cal., common to good..... | 50 | @ | 1 | 00 | |
| Limes—Mexican, # box..... | 4 | 00 | @ | 4 | 50 |
| Cal., small box..... | 50 | @ | 1 | 00 | |

Nuts.

Almonds are offering so sparingly that they are hardly quotable in a regular way. Market is decidedly against buyers. Walnuts show reduced stock and values for best qualities are tending upward. Peanuts are without quotable change, supplies and demand being both moderate.

| | | | |
|--------------------------------------|---|---|---|
| California Almonds, paper shell..... | 8 | @ | 9 |
| California Almonds, soft shell..... | 6 | @ | 8 |



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SUCCEED WHERE OTHERS FAIL.

The largest complete line of farm machinery manufactured by any single concern in the world:

Osborne All-Steel Center Drive Tidders, Columbia Mower, (1 & 2-horse) All-Steel Self Dump Rakes, Columbia Grain Harvester and Binder, All-Steel Hand Dump Rakes, Columbia Inclined Corn Harvester & Binder, Rival Disc Harrows, Flexible and Reversible Disc Harrows, Spring-Tooth Harrows, Osborne Combination Harrows, Adjustable Peg-Tooth Harrows, Sully Spring-Tooth Harrows, Horse Hoe Cultivators, Columbia Reaper, No. 8 Reaper, etc.

Every machine is fully warranted and is the best of its class that can be produced with good material, complete equipment, superior skill and long experience.

THE CUT HERE SHOWN is that of our Osborne All-Steel Center Drive Tiddler.

It is constructed entirely of steel except the shafts. This combines neatness and lightness with greatest strength. It is mounted on our famous double hub bicycle steel wheels which operate in roller bearings. Has solid continuous crank shaft, and the power is applied in the center with a sprocket chain. The crucible steel forks are journaled upon tubular steel arms. Every fork is provided with a coil spring that enables it to pass obstacles and fly back in position without breakage. Has two forks outside of wheels—stirs the hay the wheels pass over. Strongest, lightest, easiest draft. Don't buy until you see our local agent. Book on Farm and House FREE. See our Ad. next week.

D. M. OSBORNE & CO., San Francisco.

W. & P. Prepared Roofing.

One ply. Cheap. Good for two or three years.
Three ply. A first-class roof.
BUILDING PAPERS, TARRED FELTS, ROOF PAINTS, COAL TAR.
Pacific Refining and Roofing Co.,
Sold by Dealers. 113 NEW MONTGOMERY ST., S. F. Send for Samples.

| | | | |
|-------------------------------------|-------|---|-------|
| California Almonds, hard shell..... | 4 | @ | 4 1/2 |
| Walnuts White, paper shell..... | 7 | @ | 8 |
| Walnuts White, soft shell..... | 7 | @ | 8 |
| Walnuts White, Cal., standard..... | 5 1/2 | @ | 6 1/2 |
| Chestnuts, Cal. Italian..... | — | @ | — |
| Peanuts, Cal., fair to prime..... | 3 1/2 | @ | 4 1/2 |
| Peanuts, Eastern hand-picked..... | 5 | @ | 6 |
| Pine Nuts..... | 7 | @ | 8 |

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|--------------------|--------------------|----------------------|
| Flour, #sks..... | 167,587 | 4,060,232 |
| Wheat, cts..... | 174,384 | 9,421,806 |
| Barley, cts..... | 31,905 | 4,230,289 |
| Oats, cts..... | 23,870 | 569,004 |
| Corn, cts..... | 3,625 | 201,153 |
| Rye, cts..... | 2,655 | 35,598 |
| Beans, sks..... | 2,797 | 511,979 |
| Potatoes, sks..... | 21,739 | 938,013 |
| Onions, sks..... | 1,208 | 92,235 |
| Hay, tons..... | 2,188 | 106,469 |
| Wool, bales..... | 2,577 | 55,180 |
| Hops, bales..... | 154 | 8,342 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------|--------------------|----------------------|
| Flour, #sks..... | 80,568 | 2,567,900 |
| Wheat, cts..... | 146,956 | 9,180,610 |
| Barley, cts..... | 38,959 | 2,038,263 |
| Oats, cts..... | 944 | 15,146 |
| Corn, cts..... | 380 | 34,907 |
| Beans, sks..... | 917 | 279,647 |
| Hay, bales..... | 4,910 | 69,221 |
| Wool, lbs..... | 13,701,778 | 12,164,249 |
| Hops, bales..... | 28,484 | 1,239,038 |
| Honey, cases..... | 392 | 7,087 |
| Potatoes, pkgs..... | 573 | 175,311 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, April 13.—California dried fruits were quiet but firm. Evaporated apples, 5 @ 7 1/2 c # lb.; prime wire tray, 8c; wood dried prime, 8 1/2 c; choice, 8 1/2 c; fancy, 9 1/2 c. Prunes, 3 1/2 @ 7 1/2 c # lb. Apricots, Royal, 5 1/2 @ 7c; Moorpark, 8 1/2 @ 10c. Peaches, unpeeled, 5 @ 8c; peeled, 11 @ 14c.

MOORE, FERGUSON & CO.

WOOL, GRAIN, FLOUR

General Commission Merchants,

310 CALIFORNIA ST., S. F.

Members of the San Francisco Produce Exchange.

Personal attention given to sales and liberal advances made on consignments at low rates of interest.

BARGAINS!



Rushford Farm Wagon Gears.

| No. | Axle. | Tire. | Capacity. |
|-----|----------------------|---------|------------|
| 47 | 2 1/2 Hollow Steel. | 2 inch. | 2,500 lbs. |
| 47 | 2 1/2 " | 3 " | 2,500 " |
| 48 | 2 1/2 " | 3 " | 4,000 " |
| 49 | 2 1/2 " | 3 " | 5,000 " |
| 49 | 2 1/2 " | 2 1/2 " | 5,000 " |
| 50 | 2 1/2 " | 3 " | 6,500 " |
| 51 | 3 1/2 " | 3 " | 8,000 " |
| 52 | 3 1/2 " | 3 " | 10,000 " |
| 38 | 1 1/2 Concord Steel. | 3 " | 4,000 " |
| 18 | 3 1/2 Steel Skeln. | 2 " | 4,000 " |
| 19 | 3 1/2 " | 2 1/2 " | 5,000 " |

The above are our GREEN LIST Wagons. As we are overstocked on these sizes we can offer bargain prices without regard to our cost.

HOOKE & CO.,
16 and 18 Drumm Street, San Francisco, Cal.

ROSES!

10 Ever-Blooming, Field-Grown Roses for \$1.
Eight thousand Roses, field-grown, two-year-old plants, have to be cleared out. These consist of the best ever-blooming varieties, and will be sold at 10 plants for One Dollar, sent by express or delivered in the city of San Francisco. These Roses are in first-class condition and are bound to give satisfaction. No order filled for less than One Dollar. I name a few varieties, as space does not permit of the naming of the whole list: Aurora, Archduchess Marie Immaculate, Bon Seigne, Bougere, Beauty of Stapleford, Cath. Mernet, Cheshunt Hybrid, La France, Celine Forrester, Cameons, Capt. Christy, C. Riza du Parc, Cecil Brunner, Duchesse de Brabant, Duchesse of Albany, Dr. Pasteur, Etoile de Lyon, Eliza Sauvage, Francisca Kruger, Gen. Dubois, Furuta Bismark, Gen. de Tarras, Jeanne d'Arc, La Marque, Mad. Cochet, Desire, Falco, Hoste, Lambert, Schwallier, M. v. Houtte, Malmesdon, Sunset, Queen, Papa Goutier, Rainbow, and a good many other varieties. F. LUDEMANN, Pacific Nursery Baker and Lombard Sts., San Francisco, Cal.

A NEW BOOK.

California :.

:.Vegetables

IN... Garden and Field.

By PROF. E. J. WICKSON.
Published by "Pacific Rural Press" of San Francisco.

A Practical Guide to Success in California. Large 8vo., fully illustrated. PRICE \$2. Orders received at this office.

AMERICAN AND FOREIGN PATENTS
CAVEATS, TRADE MARKS.
DEWEY, STRONG & CO.
330 MARKET ST. S. F.

Squirrel or Gopher Virus.

A serious practical objection to the Pasteur Squirrel or Gopher Virus has—until now—been its want of "keeping" quality. To be effective it has had to be used within a few days from the time of its shipment from the laboratory. This has been a serious embarrassment to users of Virus on the Pacific coast; and they will be glad to learn that the Pasteur Institute at Paris has recently found means of extending the keeping period of the Virus. It is now put up in such a way as to permit of its being used any time within thirty days after being sent out from the Chicago laboratory, instead of ten days as was the case last year. The thirty-day limit allows ample time for the Virus to be received in the most remote parts of the coast and allows for any delay that may occur on account of bad weather. The Virus is not a poison and can therefore be handled without danger either to man or to stock. It contains the germ of a disease peculiar to the rodent family and which artificially sets up an epidemic among the animals, which spreads to a greater or less extent in accordance with the habits of the rodents. The Pasteur Virus was last year used with great success in a number of cases, and in its improved form bids fair to confer a great boon upon the agriculturists. A letter addressed to the Pasteur Virus Co., 54 Fifth Avenue, Chicago, will bring to the writer full particulars respecting this valuable Virus.

Extra Fine Butter Making.

At the Vermont Butter and Cheese Makers' Association Convention, held at Montpelier, at which there were 75 entries of butter, R. F. Jaynes, superintendent Ryegate Creamery, had butter that scored 98½ points, the highest of any, but, owing to the rules of the association, that no officer could receive a premium—Mr. Jaynes is its treasurer—the sweepstakes went to butter scoring one point lower, 97½; but Mr. Jaynes received \$35, the premium offered by the Vermont Farm Machine Co. for the best butter, provided the cream was separated by the Improved United States Separator.

Mrs. Carrie J. Nelson, who carried off the first premium on dairy butter, also used an Improved United States Separator.

In this connection it is worthy of remark that at the Vermont Dairymen's Annual Convention, held at St. Albans, January last, the creamery sweepstakes, grand sweepstakes and gold medal went to E. E. Symes, superintendent No. Ryegate Creamery, who also uses an Improved United States Separator. The first premium on creamery points went to E. L. Smith, proprietor Cloverleaf Creamery, Fletcher, and first premium on dairy tubs to H. L. Clapp, Barre, both of whom used the Improved United States Separator.

The Vermont Farm Machine Co. is to be congratulated upon the remarkable success of the above named separator.

The Fence Question.

Quality should be the first requisite in the purchase of a fence as well as other things. If it is possible to secure a high quality of fence at a reasonable price the purchaser is just so much more fortunate. Combinations of high quality and low cost have been sought by both manufacturer and purchaser everywhere. These two qualities are possessed in a high degree by the Cyclone fence, which is manufactured by the company of that name at Holly, Michigan. They have constructed about four hundred miles of railroad fence during the last year. This fence differs from others principally in the fact that each of the long, horizontal strands is a cable of two strong wires twisted together. This not only makes a very strong fence when interwoven with the No. 9 steel wire-crimped picket, but the twisting of the wires also provides the cables with the spring necessary to take up their own expansion and contraction. Write the Cyclone Fence Co. if you are interested in wire fencing.

The "Successful" Incubator.

We notice from the returns of the recent Chicago Poultry Show that the Des Moines Incubator Co., of Des Moines, Iowa, was awarded first premium on their "Successful" Incubator. This is quite a mark of honor and distinction, as a number of the prominent mailings were entered in the contest and the competition was keen.

This late victory brings to mind the fact that the Des Moines people have been forging ahead at a very rapid rate in their chosen line, and considering the short time they have been in business, their progress has been a little short of miraculous. The successful conduct of even the smallest poultry farm is no longer possible without the aid of a good incubator and brooder. Those of our readers who are interested in the commercial production of poultry and eggs will be looking about them for something in this line very shortly. It might be to your interest to correspond with these people.

False Impressions.

The fewest number of our people have anything like a proper conception of the worth and magnitude of the poultry industry of this country. It is a fact that no other single industry of our people—with one single exception—produces annually so great an amount of wealth. The receipts from every branch of the industry for the year 1897 amounted in round figures to \$300,000,000.

Of course, all this increase and rapid growth would not be possible under old conditions. Shrewd business men and inventors, seeing their opportunity, have perfected many machines and appliances which have made this increase and the profit of the poultry industry possible. Along these lines nobody has done more than the Reliable Incubator and Brooder Co. of Quincy, Ill. They make a complete line of incubators and brooders and other poultry supplies and appliances. Send 10 cents and get their 224-page illustrated catalogue, guide and poultry doctor. It contains information that no man or woman in the poultry business can afford to be without.

A Liberal Offer.

The manufacturer of the Acme Pulverizing Harrow, Clod Crusher and Leveler, Millington, N. J., and 30 South Canal street, Chicago, makes the very liberal offer of sending his implement to any responsible farmer on trial, to be returned at the expense of the manufacturer if not entirely satisfactory. Mr. Nash asks no money or note in advance, and under these circumstances the farmer certainly runs no risk. We do not hesitate to say that Mr. Nash is a reliable and safe man to deal with. He delivers harrows free on board at the following points: New York, Chicago, Minneapolis, Columbus, O., Louisville, Ky., San Francisco, Cal., and his customers only pay freight from those points.

Valuable Poultry Publication.

The Santa Teresa Poultry Yards of E. Van Every, Eden Vale, Santa Clara Co., have just issued a "catalogue and guide" which is worth the attention of every Californian interested in poultry. Besides the information commonly contained in poultry catalogues, it gives a vast range of advice, as the result of long experience and intelligent experimentation in California poultry practice. It will be sent free upon application to E. Van Every, Eden Vale, Santa Clara Co., Cal.

A Big Fence Order.

The Page Wire Fence Co. has just received an order from the Atlantic & Lake Superior Railway Co. for 200 miles of their standard railway fencing. This amount of fencing will make about thirty carloads, and must all be shipped by Sept. 1st, which, with the Page Co.'s already very large and growing farm and railroad trade, will make things livelier than ever around their factory this year. We understand that with one or two exceptions every railroad company of any importance in Canada is now using the famous Page fencing exclusively. Certainly nothing but a superior article at a low price could reach such a degree of popularity.—Walkerville (Ont.) Herald, Jan. 21.

The Comet Sprayer.

H. B. Rusler's Comet sprayer is a lawn and garden force pump as well as a perfect fruit tree sprayer. If you will write to H. B. Rusler at Johnstown, Ohio, he will forward you, free, catalogue and hints on spraying. The very low price at which the Comet is sold places it at once within the reach of every one in need of a sprayer. Mr. Rusler is one of the oldest manufacturers of sprayers, having been making the Comet for the past nine years, adding valuable improvements from year to year.

Imitation.

A certain concern in Michigan is manufacturing and selling a dehorning clipper which infringes the rights of Mr. A. C. Brosius of Cochranville, Pa., in the manufacture and sale of his Keystone dehorner, which has been advertised in these columns this season. The infringers have been refused letters patent by the Patent Office at Washington, and Mr. Brosius has brought an action against them which will shortly come up in the United States District Court. We very much regret that the rights of our client are thus being denied him, as the Keystone is a splendid implement for the object of its design and is very popular with the public.

The Stark Fruit Book.

We are in receipt of the Stark Fruit Book, the very handsome publication being sent out by our advertising patrons, the Stark Bros. Nursery and Orchard Co. of Louisiana, Mo. The front cover page consists of exact reproductions in color of the three leading apples, Champion, Black Ben Davis and Florence crab apples. Within are other colored plates of peaches, apricots, plums, cherries, pears, etc., together with many full page half tones of fruit and orchard scenes. Write for a copy of this book. It deserves a place in every library.

The Ertel Victor Incubator.

For people who do not raise chickens but who would like to, either for pleasure or profit, as well as for people who own poultry, the catalogue of the George Ertel Company, of Quincy, Ill., is deeply interesting reading. It tells of the opportunities for making not only "pin money," but a competency from the pursuit of chicken raising, and by its description of the Improved Victor Incubator, it shows the way to engage in the business, to a certain extent, without interfering with one's regular occupation. The catalogue will be sent free to any one who writes for it.

A Veritable Fact.

Mr. A. L. Thomas, for many years Supt. of the Canton Farm at Joliet, Ill., and extensively known throughout the Western country, has the following to say which may be of interest to some of our readers: "After one year's trial of Quinn's Ointment, I must confess it does all claimed for it, and enclose you amount herewith for six bottles." This was written to W. B. Eddy & Co., Whitehall, N. Y., owners of Quinn's Ointment for curbs, splints, spavins, windpuffs, and all bunches. It is advertised in our columns and is obtainable at all druggists. If you cannot find it send to W. B. Eddy & Co., Whitehall, N. Y., and they will supply your wants. Regular size \$1.50 per package, smaller size 50 cts.

"Best Thing on Earth."

Linden, Mich., Oct. 11, 1897. I see you have some pictures for druggists. Wish you would send me some. Never had any advertising for Gombault's Caustic Balsam; have a steady sale on same. Balsam is the best thing on earth. E. L. LANGWORTHY.

"Gave Good Satisfaction."

Lorena, Tex., Sept. 10, 1897. Enclosed please find money order for \$1.50. Send me one bottle of Caustic Balsam. The bottle I bought some time ago gave good satisfaction. Please be prompt, as I need it at once. J. W. WHITSITT.

Seed Facts to be Relied Upon.

The latest catalogue of the seed-growing firm of J. J. H. Gregory & Son, of Marblehead, Mass., describes some valuable results achieved by this long-established house, in which two generations have devoted brains and energy to improving squashes, cabbages, potatoes, peas and other vegetables. In new varieties and old ones this firm has always been found reliable. They have always taken great pride in the purity and standard excellence of their seeds and in this respect, as well as in fairness of prices, they have an enviable reputation. They will send their catalogue free on request.



Save Your Crop

COSTS ABOUT ONE CENT PER HOUR.

Buy a HERCULES GASOLINE ENGINE PUMPING PLANT; from 2 to 200 H. P. The best, most reliable, economical, never-failing plant in the market—fully guaranteed—for pumping, irrigating, running fruit graders, dryers, etc.

Write What You Want. Hercules Gas Engine Works, 215-231 Bay St., S. F.



Tanks!

When you buy a Water Tank get one that will not dry out and shrink.

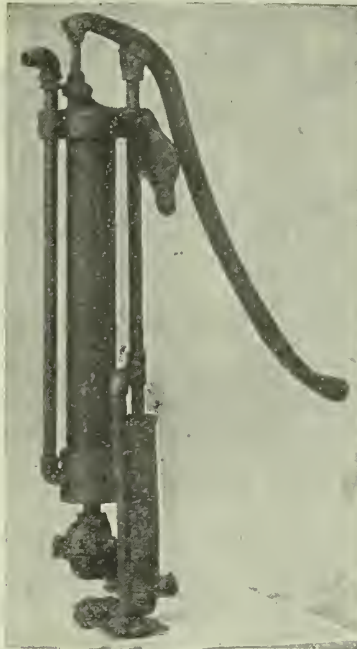
The Patent Non-Shrinking Water Tank.

The only one suitable for dry, hot climates. COSTS NO MORE THAN COMMON.

SILOS and TANK WORK of every description.

PACIFIC TANK CO.,

Sole Manufacturers, 33 BEALE STREET,.....SAN FRANCISCO.



Bean Spray Pump.

This is a Pump for small orchards, at a price low enough for any one who wants an

In Every Way Good Pump.

They are made in two sizes, for one or two sprays.

The Bean Spray Hose is chemically prepared and will withstand corrosive washes.

The Bean make of Nozzles, four different kinds, are well known.

Send for Catalogue.

BEAN SPRAY PUMP CO.,
LOS GATOS, CAL.

BAY CITY IRON WORKS,

F. I. MATTHEWS, Prop.

F. X. FISCHER'S PATENT TAPER BOILERS

Are the Fastest Steaming Straw Burners Made.

New and Second-Hand Threshing Engines and Boilers a Specialty.

Old Threshing Engines Repaired and Mounted on New Boilers at Lowest Prices.

Extras for Rice, and Mitchell, Fischer and Ketcher Engines Furnished at Short Notice.

For Circulars, etc., Address

Bay City Iron Works,
521 THIRD STREET, OAKLAND, CAL.

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330 MARKET STREET, - SAN FRANCISCO, CAL.

Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced first-class agency. We have able and trustworthy associates and agents in Washington and the capital cities of the principal nations of the world. In connection with our scientific and Patent Law Library, and record of original cases in our office, we have other advantages far beyond those which can be offered home inventors by other agencies. The information accumulated through long and careful practice before the Office, and the frequent examination of patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us to give advice which will save inventors the expense of applying for patents upon inventions which are not new. Circulars and advice sent free on receipt of postage. Address DEWEY, STRONG & Co., Patent Agents, 330 Market St., San Francisco, Cal.

FRANCIS SMITH & CO.,

—MANUFACTURERS OF—



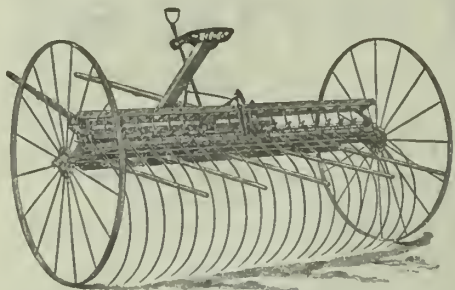
FOR TOWN WATER WORKS.

Hydraulic, Irrigation and Power Plants, Well Pipe, Etc., all sizes. 130 BEALE STREET, SAN FRANCISCO, CAL.

Iron cut, punched and formed, for making pipe on ground where required. All kinds of Tools supplied for making Pipe. Estimates given when required. Are prepared for coating all sizes of Pipes with Asphaltum.

RHEUMATISM

Permanently cured by using DR. WHITEHALL'S RHEUMATIC CURE. The surest and the best. Sample sent free on mention of this publication. THE DR. WHITEHALL MEGRIMINE CO., South Bend Indiana.

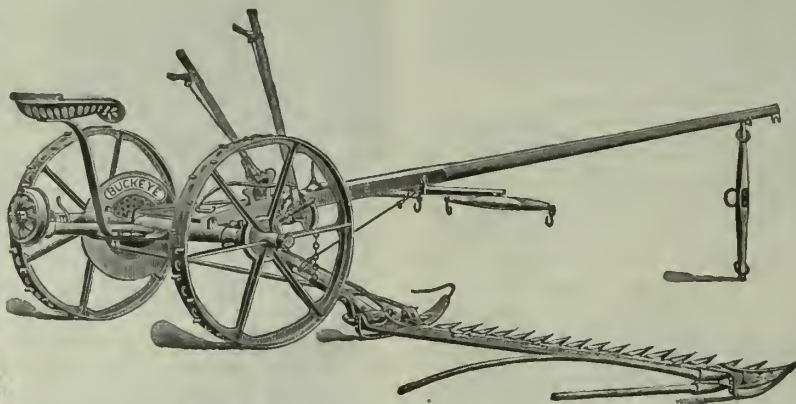


GENUINE HOLLINGSWORTH RAKES.
STAGGERED SPOKE STEEL WHEELS.

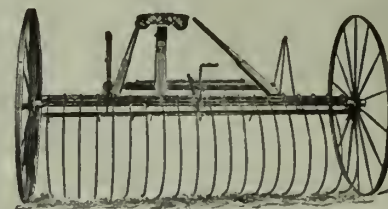
8-foot Hand Dump.
10-foot Hand Dump.
12-foot Hand Dump.
8-foot Self Dump.
10-foot Self Dump.
12-foot Self Dump.

SEND FOR CIRCULARS.

Hooker & Co.
16-18 DRUMM ST.
SAN FRANCISCO.



Genuine Buckeye Mower. (Made at Akron, Ohio.)



GEM ALL-STEEL RAKES.

8-foot Self Dump.
10-foot Self Dump.
8-foot Hand Dump.
10-foot Hand Dump.

Bargains in Rakes at
\$18.00 AND UPWARDS.

Send for No. 22 Illustrated Catalogue.

ALSO NEW VEHICLE CATALOGUE.

Two Generations of Men

Have lived since the Buckeye was founded, but the sales of 1898 will surpass those of any preceding year. Why? Because Farmers have

Send for No. 22 Illustrated Catalogue.

ALSO NEW VEHICLE CATALOGUE.

Believed in the Buckeye; Have Prized the Buckeye

Because the Mowers and Binders made by Aultman, Miller & Co. surpass all the Harvesting Machines in Simplicity, Convenience, Lightness of Draft and Durability; in short, because, whether Binder or Mower, IT IS AN ALL-AROUND MACHINE OF UNPARALLELED EXCELLENCE.

Proof? Here's one pointer: "Railroad direct to us at Bakersfield, Cal., 60 five-foot Buckeye Mowers for the Kern County Land Company." Thus reads an order received by Aultman, Miller & Co., Nov. 6, 1897, and thereby hangs this tale: In 1894 the Kern County Land Company, proprietors of the largest hay ranch in the world, took samples of Adriance, Deering, McCormick and 20 Buckeye mowers on trial. After a three years' trial the company decided: "Hereafter we will have and use the Buckeye and not a mower of any other kind." The company did not need to keep any of the others, for all, except the 20 Buckeye mowers had gone to pieces.

The Buckeye is not run on wind, or on the fitful and gusty puffery of transient devices that are not heard of after a year or two's use. It is built on solid, enduring merit and furnishes the proof that it can and will do all that its makers and agents claim for it. There are more sales of the Buckeye outright to dealers than of all the other harvesting machines combined, and that fact of itself is not such a very bad pointer.

HOOKE & CO., 16-18 Drumm St., San Francisco.

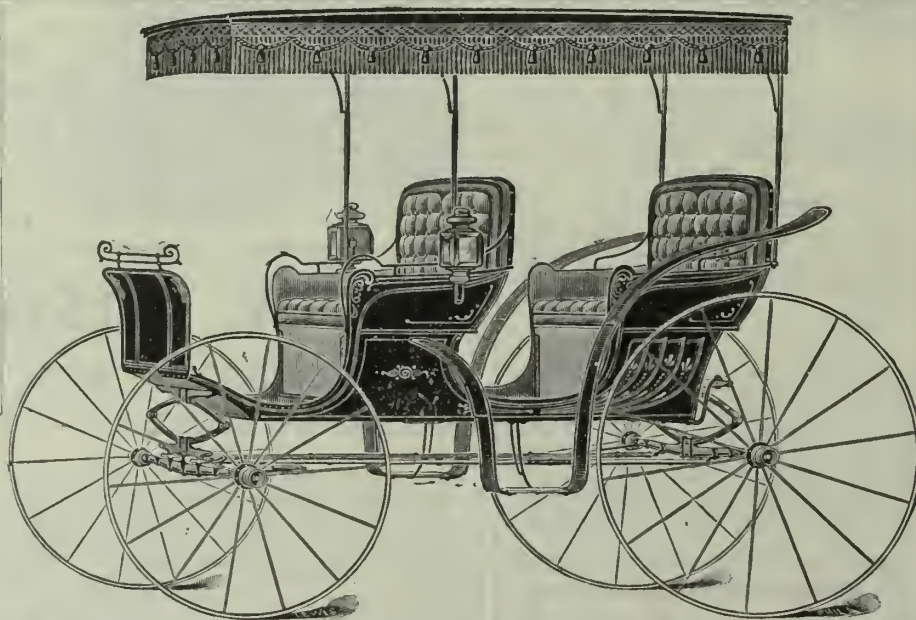
Deere Vehicles Are All Right.

LARGEST LINE.

FINEST GOODS.

UP TO DATE--

In Quality,
In Finish,
In Price.



No. 280-DEERE SPECIAL CANOPY TOP SURREY.

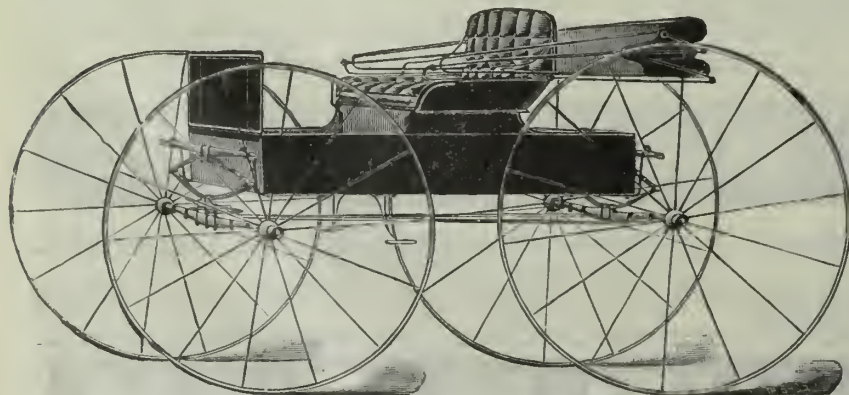
Call and See the

Goods on the Floor.

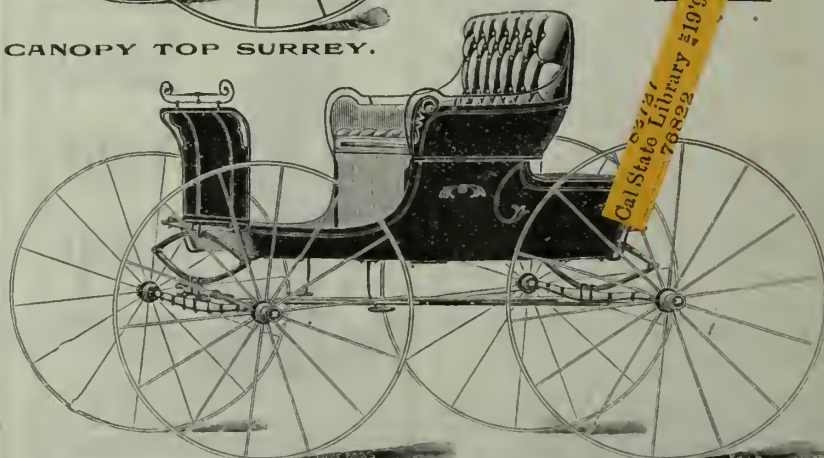
Send for Catalogue

(Just Issued)

and Prices.



No. 30-BOSS TOP BUGGY.



No. 210-FANCY ROAD WAGON.

DEERE IMPLEMENT COMPANY, 209-211 Market St., San Francisco.

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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

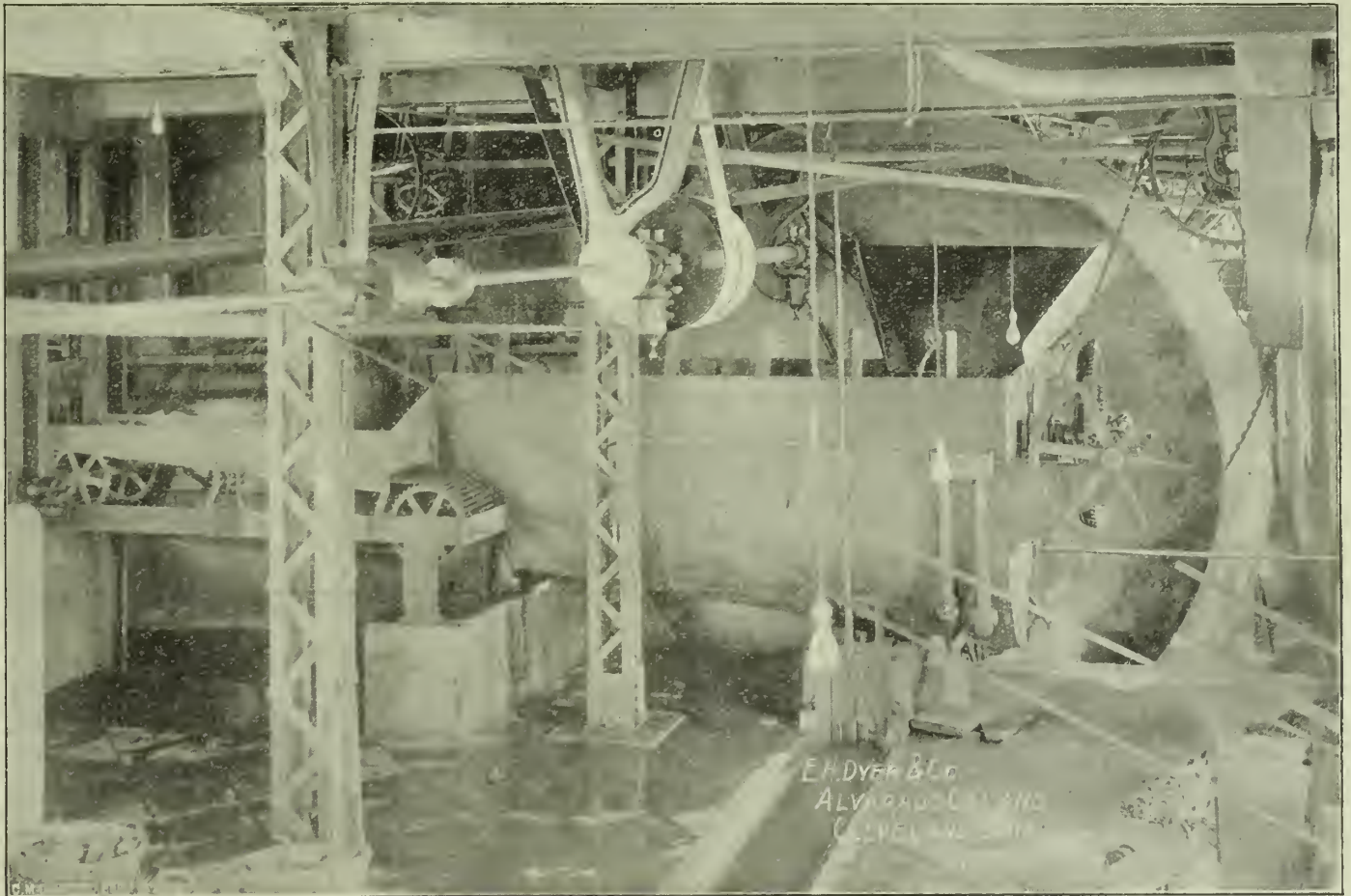
Vol. LV. No. 17.

SAN FRANCISCO, SATURDAY, APRIL 23, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

In the Sugar Factory.

In our last glance at the sugar factory we saw the apparatus for receiving, sampling and storing the beets while awaiting manufacture. The beets come to the factory by car or wagon wheels, but afterwards they travel by water. They are carried along by flowing water, which moistens the adhering soil, while it moves the beets. Entering the factory in this way, the roots tumble into the pockets of the large elevating wheel, which is seen on the right of the upper engraving on this page. As this wheel revolves slowly, the beets ride until gravity takes them from the wheel and they fall down the slide into the great iron washer, which occupies the central background of the picture. In the washer they are dashed about and rolled along until they pass out of the washer into the vertical elevator, which gives them a ride to the top floor of the factory. They are white and clean—very different in appearance from the beets of the storage pits. On the top floor is the slicer, which reduces the roots to V-shaped strips about five-eighths of an inch wide by one-eighth thick and of various lengths. The beet is now ready to



MACHINES FOR WASHING BEETS AND ELEVATING THEM TO THE SLICERS.

yield its juice to the sugar maker. The masses of strips fall from the slicer into the mouth of a long chute, which leads downward to what is called the diffusion battery. They make this trip by gravity,

and the chute is seen in the central part of the lower engraving. It is movable, so that the sliced beets may be delivered successively into the receptacles arranged around the circle on the main

floor. These are called the cells of the diffusion battery; each of them holds about two and one-half tons and is connected with pipes which bring hot water to the sliced beets. This hot water draws sugar from the tissue of the beet and is drawn off. Fresh hot water is admitted to the same beets, and more sugar is extracted, and so on until the sugar is completely taken from the beets. The cells of the diffusion battery are about 6 feet in diameter by 8 feet deep. Each cell has a heater filled with brass tubes, so the juice may be heated by steam, and all the cells and heaters are connected by piping so that either water or juice may be admitted to any individual cell or caused to circulate through them all. This extraction of sugar by diffusion takes the place of all presses, and it secures a maximum of sugar with a minimum of impurity. The views are of the Alamitos factory, taken from Mr. Holabird's book, and represent the latest American styles of beet sugar machinery.



THE DIFFUSION BATTERY AND INTERIOR PERSPECTIVE OF THE ALAMITOS FACTORY.

PACIFIC RURAL PRESS.

Office, Clark Building No. 330 Market St., San Francisco, Cal.
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Registered at S. F. Postoffice as second-class mail matter.

ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, April 23, 1898.

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BUSINESS ANNOUNCEMENTS.

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Weather and Crops.

The week has done nothing to relieve the weather and crop situation, but, on the other hand, has aggravated it by a hot wave and succession of hot winds, which have burned many famishing grain fields and pastures, and rendered even more precarious the hopes of those who still had reason to expect something at the harvest. There is very little in the outlook that is promising, except for those who have moist or irrigated lands, and their moisture supply promises to be short of the average this year. On the whole, the people are brave and confident, and are already planning to turn the unproductive year to the best account in soil preparation for future production.

The following data for the week ending 5 A. M., Wednesday, April 20, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Last Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | .08 | 31.15 | 48.67 | 41.47 | 40 | 56 |
| Red Bluff..... | .00 | 12.30 | 34.15 | 23.48 | 46 | 86 |
| Sacramento..... | .00 | 8.87 | 17.28 | 19.07 | 41 | 88 |
| San Francisco..... | .00 | 7.75 | 22.60 | 21.83 | 46 | 78 |
| Fresno..... | .00 | 4.01 | 10.52 | 9.09 | 46 | 98 |
| San Luis Obispo..... | .00 | 6.05 | 20.71 | * | 42 | 96 |
| Los Angeles..... | .00 | 5.26 | 16.74 | 16.31 | 48 | 98 |
| San Diego..... | .00 | 4.18 | 11.64 | 10.02 | 54 | 86 |
| Yuma..... | .01 | 1.66 | 5.35 | 2.99 | 51 | 94 |

* No record.

The Produce Markets.

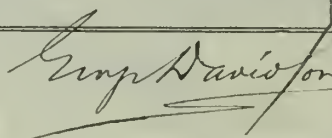
The California wheat market easily holds the advance which ten days ago carried the price above the parity of foreign markets and, therefore, over the heads of export buyers. Such business as there is confined necessarily to millers and general local trade; and from this time forth it is hardly to be expected that the exporters will be in the market. The world's markets are generally advancing and are strong as we write. Chicago is 3½ cents per bushel better than last week, and Liverpool has advanced from 7 to 11 cents per cental. The unusual conditions in San Francisco, brought about by the dry year outlook, have thrown several heavy dealers far out of their calculations, and the result is a general shakiness in the speculative business field. In addition to the McLaughlin and Erlinger failures of last week, we have to report the more recent collapse of Aaron Adler, a well-known broker; and if the gossips of the street are not far wrong there are others in the unstable list.

The tendency in feedstuffs is downward, in spite of the fact that a dry season is now accepted as certain. Barley is lower; oats are weak; millstuff barley steady; and hay, while holding its own, is unmistakably top-heavy at prices ranging—about \$25 per ton. It is being demonstrated that feeds can be laid down here from Oregon, the East, Arizona and elsewhere at prices relatively lower than those recently quoted for domestic feedstuffs. Within the week there have been large arrivals of Eastern corn and

San Francisco.

Table of the four wet seasons of very small Rainfall, between 1849 and 1898.

| Wet Seasons | Total inches of Rainfall each season. | Days on which Rain fell. | Depth in inches. | Months | | | | | | | | | | | |
|------------------------------------|---------------------------------------|--------------------------|------------------|--------|--------|-----------|---------|----------|----------|---------|----------|-------|-------|-----|------|
| | | | | July | August | September | October | November | December | January | February | March | April | May | June |
| 1850-'51 | 7.40 | 51 | 0 | | | | | | | | | | | | |
| | | | 1 | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | |
| | | | 3 | | | | | | | | | | | | |
| 1863-'64 | 10.08 | 37 | 0 | | | | | | | | | | | | |
| | | | 1 | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | |
| | | | 3 | | | | | | | | | | | | |
| 1876-'77 | 10.00 | 46 | 0 | | | | | | | | | | | | |
| | | | 1 | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | |
| | | | 3 | | | | | | | | | | | | |
| | | | 4 | | | | | | | | | | | | |
| 1897-'98 to the 18th of April 1898 | 7.75 | 45 | 0 | | | | | | | | | | | | |
| | | | 1 | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | |
| | | | 3 | | | | | | | | | | | | |
| Average for 4 seasons | 8.81 | 45 | 0 | | | | | | | | | | | | |
| | | | 1 | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | |
| Average of 48 seasons | 23.70 | 66 | | | | | | | | | | | | | |
| Largest in 1861-'62 | 49.27 | 83 | | | | | | | | | | | | | |



sions, both at Los Angeles and Riverside, was anti-pest legislation. Mr. Wardell appeared as the champion of the law now pending in Congress, which provides for examination and certification of nursery stock by the Government of the country shipping to the United States. Mr. Crow zealously upheld local inspection and quarantine at the point of destination. The county commissioners sided with Mr. Crow, and the conventions followed their lead in preferring a bill which provided for inspection in this country. The arguments on both sides are too long to be sketched at this time, but we may find space for them later.

The Worst of the Dry Years Since 1850.

How bad the current year really is as compared with other bad years is graphically shown by the diagram on this page, which was prepared by Prof. George Davidson of this city and published in the *Daily Commercial News*. As may be seen, the table gives the monthly rainfall for the four wet seasons of 1850-51, 1863-64, 1876-77 and the present 1897-98 to date. The wet season is reckoned from the first of July of a given year to the end of June of the next year, and the wet seasons referred to are the driest recorded. The data used for the earlier years are from the observations of Thomas Tennent, 1849-90; and for the later dates, from the records of the Weather Bureau.

The diagram will well repay careful study, for it presents much information in condensed form. The totals show that the present year is likely to be the worst since agricultural operations began in this State. There is a chance yet for quite a little rain in April and May, counting by what fell in 1851 and 1864, but there is also as good a chance that April and May may be as dry as in 1877. There is not much comfort in this for those who can still be helped by spring showers, but still they may yet be comforted.

The figures are for San Francisco, and therefore have only a relative significance for the balance of the State, and yet every inch of rain that falls at San Francisco is represented by a large or small factor in every locality in the State, and on the average may be said to represent not less than \$3,000,000 per inch in gold coin. That is the terse

and practical way in which Prof. Davidson puts it. He recalls the remark of Senora Bandini of Old San Diego, about 1851, when the army officers who had sought for a new route to Fort Yuma and found the grass up to the saddle girths in the wet season of 1849-50 and therefrom predicted a remarkable future for the agriculture and stock of California: "Ah, yes! that was all very good and very unusual, but I have lived long enough in California to have seen seven consecutive wet seasons when the San Diego river did not flow past the old town, and we had to dig deep wells in the sands of the river bed to get even a small amount of water." And the dear old lady emphasized her recollection by seven times repeating the word "Seco," with a strident emphasis on the last.

It is an interesting fact that this year San Diego, which affords a *locus* for Prof. Davidson's reminiscence, is more generously treated by the clouds than are other regions farther north, which this year do not make a s good a show as the northern and eastern districts of San Diego county.

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Butter is firm. Eggs are weak.

For particulars see our regular market page.

The Fruit Growers' Conventions.

Our columns are largely occupied this week with the important matters presented at the conventions of fruit growers at Los Angeles and Riverside, and other topics of equal interest will be treated in future issues. The conventions were hardly up to expectations in point of attendance. Los Angeles came nearer to the mark, but Riverside fruit growers were too busily engaged in the rush of picking and packing oranges for shipment to take much interest in deliberative assemblies. Still the discussions were spirited, the essays and addresses well prepared, and the influence of the meeting must be considerable in the dissemination of important information. Among the subjects most ably presented was that of co-operative handling of deciduous fruits by A. R. Sprague of Fairmont, who is actively engaged in organizing the deciduous fruit producers of southern California. We have heard most of the exhortations on this subject for several years back, and Mr. Sprague's has not been surpassed in point and power.

The subject which excited the warmest discus-

Weather and Crops.

SUMMARY OF THE REPORT OF THE U. S. WEATHER SERVICE FOR THE WEEK ENDING APRIL 18, 1898.

The drought continues in California, the only rainfall for the week reported from the various Weather Bureau stations amounting to but 0.02 inch, at Eureka. The deficiency in rainfall is nearly 1 inch in the northern coast sections, ½ inch in the great valleys, decreasing southward, and about ¼ inch south of the Tehachapi. The weather has been warm as well as dry. The temperature for the week exceeds the normal about ten degrees in the interior and five degrees or more along the central coast. The continued absence of the late spring rains gives little hope of relief, and the prospects for crops could hardly be worse. While the cloudy weather at the beginning of the week was not unfavorable, the subsequent north winds dried up the land and in places finished the grain. The 12th and 13th were unusually warm days, the temperature in places breaking the record for the period.

Grain and hay have suffered severely and the out-

look is discouraging. Stock is starving and horses can be bought in some localities for \$1.50. Sheep perishing. Fruit doing well, but as orchardists have not faced such a dry season before, the future is uncertain.

SHASTA.—Fruit not so badly injured by early frosts as supposed. Figs are setting nicely, with promise of large crop. Grain at a standstill. Driving stock to summer ranges earlier than usual. Rain badly needed.

TERAMA.—Crop outlook very discouraging. Doubtful if rain now would do any good. Favorable for fruit; orange trees in full bloom.

GLENN.—Summerfallow grain is standing the dry weather better than expected. Some farmers expect to raise feed for their stock.

BUTTE.—Orange trees in bloom. Good indications of heavy crop of lemons, plums, pears and prunes. Feather river rising; snow melting on the high ranges above.

YUBA.—On adobe lands and rich river lands moisture is failing and grain looks very bad. All apricots and almonds and almost all of peaches gone. No hay; small crop of pears and prunes. Outlook discouraging.

SACRAMENTO.—Ten days more of this weather and hay and grain will be an absolute failure; if good showers occur, will give one-third of crop.

YOLO.—Fruit advancing rapidly; spraying fruit trees. Heavy orchards on lowlands still being irrigated.

SOLANO.—First box of cherries to go East this year shipped on 15th, eleven days earlier than last year; good crop expected. Other fruit not showing up well. Summerfallow may yield half a crop; winter-sown will be a failure.

SAN JOAQUIN.—Dry, with norther early in week. Grain damaged considerably.

STANISLAUS.—Drying up fast. Crops inside canal district doing well, but outside, beyond hope. North winds.

KEEN.—Irrigation water scarce. Fruit trees that are not frosted doing well. Limited acreage in dry lands still promises grain. Some dry lands will produce hay, some nothing.

FRESNO.—Warm weather. Increased flow of water from the mountains; much needed for irrigation.

KINGS.—No grain. Fruit that escaped frost is doing well. Vineyards leaving out.

TULARE.—Outlook for grain very poor. Will have some pears and prunes.

SONOMA.—Grapes coming in. Prunes a good crop. Rain needed.

NAPA.—Indications of good grain and hay crop. Very fair fruit yield.

ATAMEA.—Grain on southern exposures drying out. Prospects for hay and grain poor. Grass drying fast. Fruit and nut season fair. Grapes budding. Vegetables doing well.

LAKE.—The 12th was the warmest April day in fourteen years. Early sown grain looks very well; late sown will amount to nothing unless rain falls soon. No plowing. Peaches, pears and apples promise well.

SAN MATEO.—Some early hay being cut. Strawberries ripening, but crop will be short. Ground very dry.

SANTA CRUZ.—Hot weather and dry winds have had bad effect on crops and feed.

SANTA CLARA.—Drouth is beginning to be seriously felt. Hay and grain must be a failure. Ranchers have little hope. Much fruit on trees, but how it will mature is problematical, as orchardists have never experienced a dry year since fruit growing reached its present proportions.

MONTEREY.—Very warm and dry. Small chance for any crop.

SAN LUIS OBISPO.—Crops look very bad. Apples and peaches coming out before than anticipated. Grass and grain gone. Horses sell for \$1.50 each; poor ones turned out to die. Shipping cattle away.

SANTA BARBARA.—Hot wave middle of week. No particular damage.

VENTURA.—Hot wind damaged apricots; many falling.

LOS ANGELES (Bassett).—Grain drying. Some alfalfa on market. Little corn planted. (Duarte).—All cereals suffering for rain. Navel oranges all shipped. (Los Angeles).—Fruit of all kinds looking well. Hay and grain a failure. Acreage sown to grain and hay will afford some pasturage. (Palmdale).—No pasture and very little grain. (Pomona).—Hay crop short. Citrus fruits doing fairly well. (San Fernando).—North wind. Hay and grain a failure. Deciduous fruits fair.

SAN DIEGO.—No rain. Oranges and lemons blossoming profusely. Strawberries ripening slowly. Unusually windy.

RIVERSIDE.—No improvement in grain and hay. Orange shipments slightly increased.

ORANGE.—Hay and grain crop light. Fruit trees looking well.

EUREKA SUMMARY.—Drying north winds checked growth of grass and grain. Pear and cherry trees in full bloom. Rain will soon be needed.

LOS ANGELES SUMMARY.—Intense heat and dry winds fore part of week about ended prospect for hay and grain, dried up vegetation not under irrigation and injured apricots and walnuts to some extent.

AGRICULTURAL REVIEW.

CALIFORNIA.

Butte.

HEMP A SAFE CROP.—The hemp crop in Butte seems a pretty safe crop, as it is not planted until late, when it would seem as if most danger from frost was over with. It is not so liable to injury as some other crops, and it pays better than most other things that can be grown. A gentleman who is somewhat posted in hemp growing tells us that in this county it requires about one man for each ten acres of hemp produced, so far as labor is concerned.—Marysville Appeal.

Contra Costa.

DRIVERS for Miller & Lux are on their way north with 10,000 cattle that will be pastured on the tule lands east of Antioch. They will be driven to the Webb tract. This land is not under levee and is ordinarily very wet and would be too soft for cattle, but this year there is so little water that it is dry, and the cattle will do well. At present the land is overrun with wild hogs. Last week Richard Uren and a party succeeded in killing and capturing eighteen.—Antioch Ledger.

Fresno.

"A MOVEMENT is on foot in Fresno county," says the Visalia Delta, "to have a real agricultural fair this fall. The wheel of fortune will give way to the country pumpkin. Won't this be a great change?" Remarking upon this statement, the Hanford Journal says: "Yes, it will be a change, for in the past it has been the country pumpkin who has given away his hard-earned cash to the wheel of fortune."

CROP OUTLOOK AT SANGER.—The condition of horticultural matters with reference to the frost is, about this: Apricots and almonds throughout the valley have been generally destroyed. Peaches, nectarines and figs have been greatly damaged, but there will probably be almost as much as last year. Of plums, prunes, Bartlett pears and some varieties of apples there will be an abundance. Orange and lemon trees are blooming very profusely, and there will be an immense crop unless we have some more frosts. Our grape vines never looked better and a full crop seems certain. A dry year is here, and there is no use in denying the fact or in trying to fool ourselves. Now we should use our endeavors to overcome its effect. The Herald has faith enough in our people to believe that a way will be found to overcome, in part at least, the ill effects that must follow all insufficient rainfall. Of course, money will be close and hard to get, but we anticipate no trouble in the matter of living. We will know nothing about a short rainfall in a hundred years, and we should not let it worry us now.—Sanger Herald.

A HARD OUTLOOK FOR STOCK.—Unless something at present entirely unforeseen happens, fully 100,000 head of sheep and cattle will die of starvation in this county alone in the next few months. The order of the United States Government revoking for the present the restriction by which cattle and sheep are prohibited from being pastured in the reservations and opening these reservations for such pasturage until further notice will not afford the desired relief. The herdsmen

are not slow to point out that the order still excludes the stock from the parks, and it is in these alone that the requisite pasture can be obtained. The forest reservations, as such, are as bare of grass this year as the plains themselves. The entire tract of country on the west side from Newman to Bakersfield, embracing an area of 100 miles in length by 30 in width, and which in previous years has supported enormous herds of cattle at this season, is now a desert. The waters of Tulare lake will be lower this year than at any time within the memory of the oldest inhabitant. To reach the water the cattle will have to wade through three feet of mud and the prospects all through the slough country are for a repetition of the scenes of 1877, when hundreds of sick and thirsty animals died on the banks from sheer exhaustion and inability to wade farther.—Fresno Letter.

Los Angeles.

THE OUTLOOK.—The greater part of the agricultural and horticultural products of this section are raised by irrigation. There are exceptions to this rule. Grain and grain hay are raised without irrigation, and these crops are short. Hay has advanced in price to \$20 and \$22 per ton. Alfalfa hay is raised by irrigation mostly, and farmers having alfalfa fields are reaping a harvest, because the alfalfa hay crop is not, as a rule, short and the price is very high. Beets are raised without irrigation, and the crop will be very short. Persons who seem to be well posted claim that the sugar beet crop will not be over one-half an average, and possibly not over one-quarter. Crops raised by irrigation will not be cut short for want of water, although some of the fruit crops, such as apricots and peaches, will be light in places, on account of the late frosts, which killed some of the fruit in the bloom or soon after. The supply of irrigation water will be but little short of the normal. Orchardists, during the past two months, have been using water freely and soaking the ground so thoroughly that a little shortage in midsummer will do but little or no damage. * * * On account of our irrigation systems, which are very complete, southern California is much better able to stand a dry season than are the valleys north of Tehachapi pass—at least those portions of the great valleys where there are no irrigating systems, and in this respect we are especially fortunate. Our condition is not so good as it might be, but it might be much worse, and a dry season today has few terrors as compared with a dry season twenty years ago.—Los Angeles Herald.

Monterey.

SQUIRREL BOUNTY.—A leading rancher of the valley yesterday expressed himself decidedly as to what he regarded the poor policy of the Supervisors in the matter of the squirrel bounty. "The Supervisors," he said, "began paying bounty on squirrel tails in the fall, continued it through the winter, and are cutting it off in the spring. Nine-tenths of the squirrels killed during this period have been males. As it is a well-known fact that the females hibernate during the winter, consequently very few of them have been killed, and it will be but a few weeks after spring opens up that we will have apparently as many squirrels as ever. The thing to do is to have the bounty in operation during the summer instead of the winter months.—Salinas Index.

A BIG WELL.—At the Spreckels sugar factory, near Salinas, men are employed in sinking an artesian well which will probably be the largest well in California. The well will be four feet in diameter and will be sunk to a depth of 160 feet. The sections of pipe as they are driven down are riveted together, and have already reached a depth of 24 feet. To sink this huge piping some ingenuity has been displayed. Across the top of the last section, up some 20 feet in the air, are laid two heavy rails, on either side of which is placed a tank, which will hold about 800 gallons of water. As the earth is dug from the interior by a hydraulic-worked shoveler, of the capacity of ten cubic yards, these tanks, filled with water, press the pipe down gradually.—San Benito Advance.

San Diego.

LEMON GROWERS WANT CHEAPER FREIGHTS.—Lemon growers should take no rest until they have secured as permanent the \$1 rate made by the Santa Fe road to Eastern points. As has been wisely pointed out, a temporary reduction will work hardship instead of profit to the lemon growers. The fruit will be rushed to the market in such large quantities, everybody desiring to take advantage of the reduced rate at the same time, that a glut will follow and lemons will bring no returns to speak of. There is no doubt that a \$1 rate can be made profitable to the railroad. Much fruit that could not be shipped at the higher rate may be forwarded at the lowest with a small margin in favor of the grower. The suggestion made that chambers of commerce, boards of trade and such like bodies in southern California should use the most strenuous efforts to have the low rate made permanent must be immediately acted upon. United action alone can win and now is the time to act.—National City Record.

WORKING UP LEMON CULLS.—The Otay Press announces that the citric-acid factory, at National City, is now ready for the machinery, which has been ordered, and daily expected to arrive. The capacity of the plant when fully equipped is expected to be sufficient to use every lemon raised in the district, with no fear of overstocking it. The factory will start up with a capacity of ten tons per day, and the company has a large stock of lemons on hand to begin with. The price to be paid for culls will be about \$5 a ton. Many tons of lemons are now rotting for the want of utilization, and several carloads shipped from the northern part of the county destined for the factory have been dumped into the bay. G. D. Eastman, of Fallbrook, is constructing a plant for the manufacture of citric acid, on a small scale, and expects soon to be able to use the cull lemons that now go to waste.

San Joaquin.

BEETS IN PLACE OF GRAIN.—Farmers in the vicinity of New Hope are reported to be irrigating their lands and getting ready to plant sugar beets for a season's crop on grain lands that have failed. The seeding will commence as soon as the ground is dry enough again to work. Tracts on Grand, Ryer and Brannan islands are being irrigated for the purpose. In all, it is expected that 5000 acres of beets will be grown in this county. On account of the dry season, the output of sugar beets will be smaller than usual, but G. K. Kaaf says that the factory at Crockett will run. A. J. Larson of Lodi is the principal grower so far. He says that several hundred acres that he has put in are looking well, and he will plant more as soon as he can irrigate the land.—Lodi Sentinel.

IRRIGATING SAN JOAQUIN LOW LANDS.—Irrigation has secured a better foothold in San Joaquin county within the last few weeks than it had under either of the irrigation systems established with so much cost. And the new systems are comparatively inexpensive ones. All told, nearly 20,000 acres of land will be under irrigation in San Joaquin county within a few weeks. The great bulk of it is in the reclaimed region, where the cost is nominal. It was generally supposed that water could not be run on the island farms from the San Joaquin river without pumping when the river was at so low a stage as it is now, but the necessity caused by the recent drouth resulted in an investigation, and it was ascertained that irrigation was feasible. The reclaimed lands are basin-shaped, being lowest at the center of the tract and highest next to the river bank. Along the levees the water in the river is below the surface of the land, but it can be conducted through a ditch into the lower central portion. On the Woods Brothers' tract a survey showed that it would be necessary to run a canal from Middle river half a mile inland before the

water could be conducted out over the surface of the farm. This canal will be 25 feet wide on the bottom. Near the river it will have 2½ feet of water in it at high tide and 1½ feet at low tide. Sixty horses and fifteen scrapers are now engaged in the work. The irrigation system will be made a permanent one, and for that reason a substantial headgate is being fixed in the levee at the Middle river end of the canal. Most of the irrigation is being done by means of siphons, which conduct the water over the tops of the levees.—Stockton Mail.

San Luis Obispo.

SEEKING PASTURAGE.—The feed for stock in the southern part of the State is so short and of such inferior quality that stockmen are bestirring themselves to meet the emergency by securing pasture lands in other portions of the State. The largest consignment that has left the south pulled out on the Southern Pacific yesterday. The number of cattle in the shipment was between 1000 and 1100 head. They were from the R. T. Buell ranch at Buell flat, coming over the Pacific Coast railway in two trains of sixteen and twenty-one cars respectively. They were transferred through the cattle chutes to the Southern Pacific cars. There were thirty-two big cattle cars in the train that left for the north. Five engines were used in pulling the train up the grade. Mr. Buell has secured pasturage for these cattle at Calistoga. Many other heavy shipments will probably be made within a few days.—San Luis Breeze.

Santa Barbara.

SAVING HORSES.—Messrs. Houck and Holloway of Santa Maria valley are among us gathering up valuable horses to take to Mendocino county for pasturing. Their proposition is to take the horses about May 1st and deliver them between December 1st and 15th next at \$2 per month from the date of taking, paying all expenses of both trips. They are to receive \$2 per head on starting and \$2 more in August and the balance when the horses are returned.—Lompoc Record.

IRRIGATION WATER PETERING OUT.—The water problem is becoming serious. The hot spell has reduced the river's flow by one-third, and several pumping stations find scant supply for a perpetual run. The upper plant on the Robinson tract has ceased night work and only pumps from 6 o'clock in the morning to 6 o'clock in the evening, so that those below may have the balance of the flow. The Salsipuedes is cut off by irrigators and a new plant with a 40 H. P. engine and a 10-inch centrifugal pump is being set up at the ranchita, three miles up the river. With these two drafts on the supply, it is doubtful if a very great flow for use below can be secured. It is a pity that our people had not realized the situation three months ago and started the pumps which would have saved the valley to abundant crops. The most must be made of what we have. Only a few can now receive any benefit from water.—Lompoc Record.

Siskiyou.

GOOD CROP OUTLOOK.—The grain crops look fine in this county at present and are growing nicely, under the influence of late rain showers and cool evenings. Nearly double the usual quantity of grain will be produced this season in Siskiyou, unless a long and severe drouth occurs during May, which is not likely. The winter has been very favorable for fall sown grain and stock raising, hence we look for an exceedingly prosperous year in this county, as grain and beef will command higher prices to insure good profit over cost of railroading to sea coast. Grass crops, especially alfalfa, will be unusually large and excellent, insuring a great abundance of superior hay, to feed beef stock during the next fall and winter months. Considerable of it in pressed packages will no doubt be shipped with profit, loose hay being too bulky for transportation. The fruit crops may also turn out well, as the budding is only just commencing, and therefore escaped the frosts doing so much damage in the Sacramento and San Joaquin valleys, where the season for trees to blossom is fully six weeks earlier than the mountain regions of Siskiyou. Apples generally escape the coldest snaps, and grow best in cool sections, although it is probable that peaches, cherries, apricots and other fruits will be abundant this year, on account of not getting too early start for being nipped by late frosts.—Yreka Journal.

Solano.

THE Starr mills at Vallejo are being extensively repaired and refitted.

Sutter.

CONDITIONS IN SUTTER COUNTY.—The summer is beginning early this year, as the thermometer registered several days this week as high as 90°. With the hot north winds during the past week, and lack of moisture in the ground, the grain has begun to show the effects of the drought; and unless cool weather prevails and occasional showers occur, the yield will be curtailed materially. Barley and wheat are being rushed into maturity far too early and will not fill out in the head to much profit unless checked by cool weather. The effect of the drought is noticed more on the adobe lands and late-sown grain. On sandy soil the summer-fallow grain is doing very well and will make a good yield with any favorable weather. Haying will begin in a few days in some parts of the county, and harvest will be much earlier than usual.—Sutter Farmer

Tulare.

VARIOUS WAYS OF TREATING SQUIRRELS.—John Randall came in today and brought 1000 old newspapers, to use in plugging up the squirrel holes on his ranch. Mr. Randall has been experimenting with this remedy for two years with good success, and others have tried the remedy. They take a newspaper, wrap it around their hand and shove the paper funnel into the squirrel hole. It is said a squirrel will not come out through a hole thus plugged up.—Hanford Sentinel.

The newspaper treatment has been tried here, and we have used poisoned wheat and bisulphide of carbon. Each method has its advocates. One man says he strewed the ground with dead squirrels by using a few bits worth of wheat. Another says he tried it, and one or two old patriarchs of the tribe jumped in and stored the grain, robbing the main army of a share, so the result was not as general as was desired. But be used bisulphide of carbon and paralyzed the pests right at their own firesides. He wet little balls of rags in the stuff, rolled them down the holes, stopped up the openings, and no squirrels ever came out to inquire about it.—Tulare Register.

The Tulare county Supervisors are considering an ordinance providing a bounty of 2 cents each for squirrel scalps.

Yolo.

ACTIVITY IN IRRIGATION.—The water of Cache and Putab creeks is now appropriated as it never has been for years past, and many of the enterprising agriculturists of this county are preparing with feverish energy to avail themselves of this source, supplied by Nature, to restore life and vigor to the dying vegetation, and practically to save themselves and children from what must have been a fall and winter of hardships and privations. The apparent ill luck of '98 will be at least a lesson, perchance a bitter one, which may in the future be of great value to farmers and orchardists of this county. They will have learned the necessity of preparation for irrigation in cases of emergency. Throughout the entire county people are preparing to irrigate grain crops and considerable of the sick grain may yet be saved. Where Nature has supplied advantages, the waters of the creeks mentioned will be used through ditches and in many instances pumps will be put into operation drawing water from large wells.—Woodland Mail.

HORTICULTURE.

Fertilization.

By C. B. MESSENGER, of Pomona, at the Los Angeles Fruit Growers' Convention.

The Situation.—With the discouragements that come to the fruit grower from battling with the elements, a market which has so long been depressed that it has become chronic, and an apparent desire on the part of some buyers of his product to fleece him, comes the necessity for producing that product with as great economy as possible. Abundance of water, intensive cultivation and the highest fertility are necessary to produce the crop planted, in such quantities and of such quality as to make the returns interesting to the grower.

The increase of fertility is perhaps the one subject on which the most study has been placed, and rightfully, for it is perhaps, next to the subject of marketing products, the most perplexing, especially so to the fruit grower, who is unable by rotation of crops to secure a perfect balance of the various elements in his soil. Hence some waste will always result, for we have not an accurate knowledge of the soil contents and fruit and tree requirements. Soil analysis and test plots may hint in the right direction, but neither are infallible. And, in fact, the latter, as done in the usual rough-and-ready manner of the grower, is worse than perplexing, for very contrary results are obtained. Test plots at experiment stations, or by persons of means who could maintain experiments over a series of years, would, I believe, be of great value. But for the average grower every means of available fertility must be sought without waiting for experiments.

To such there are three available sources of fertility. The first I will refer to is "tillage."

Tillage.—"Tillage is Manure," is an adage as true as it is old. The elements contained in ordinarily rich soil are in sufficient quantity to produce abundant crops for generations to come without the addition of one single ounce of fertilizer. But the trouble is that those elements are largely unavailable to the rootlets of the plant. For instance, the first 18 inches of soil of one acre of land contains probably over 10,000 pounds of each of the three principal plant food elements, viz: phosphoric acid, nitrogen and potash, while an ordinary crop of fruit would not remove to exceed 100 pounds in any one year.

Hence, how can this unavailable plant food be made available? is worthy of much study. The old Romans discovered that to stir and pulverize and admit air to the soil gave greater fertility. This they termed manuring the soil, from two words signifying "hand" and "to work." Later, one of their wise farmers discovered that the droppings of animals, placed about plants, took the place in part of so much hand-working of the soil. Thus, for the want of a better name, the term "manure" was applied to those droppings, which is to-day almost exclusively used in that sense.

I think not one farmer in ten ever considers that he is adding one iota to soil fertility, excepting in a mechanical way, when he plows and cultivates. His principal aim is usually to kill weeds and conserve moisture—both admirable; but further than that, he should till with the idea of greater fertility.

To my idea, the plow is the best instrument for increasing fertility. It throws up to sun and air portions of the soil, and throws down next to the roots the soil which for a year has been acted upon, and the latent elements rendered assimilable to the rootlets. In addition to the direct benefit to the soil elements, plowing gives opportunity for introducing fertilizer next to roots.

Producing greater fertility by green manuring belongs, I think, under this portion of my subject. The roots of leguminous or other plants have wonderful power in attacking and dissolving the different elements in the particles of soil and appropriating them to their own use. When this is accomplished, the crop is turned under with a large plow; it soon decays and becomes a part of the soil with incalculable benefit, not only in making more available the elements, but mechanically and in every way. For instance: A heavy, compact soil is made lighter and more porous by the humus added by the decaying matter, while the coarse, porous soil is made more compact and with greater absorbing power. This may seem paradoxical, but it is true.

But tillage, perfectly done as it may be, is only a partial substitute for manure. Likewise, manure is only a partial substitute for tillage.

The farmer must then look to some other source than tillage for sufficient fertility. Hence the second topic of my paper is "natural manure."

Natural Manure.—By natural manure I mean the stable manure, refuse vegetable matter and all wastes of the ranch. Next to tillage, this is the best and cheapest method of adding fertility. Best, because its effect is twofold: it is a nutrient and, as well, has a good mechanical effect on the soil. Be-

sides it's cheap, as produced on the ranch, but I think will hardly pay hauling great distances.

But in saving the wastes of the ranch there is wealth. I believe in collecting in cement pits and rotting down for application in January. In saving, great care should be exercised to save the liquids from all animals, for the liquids contain over six-tenths of all the value of the manure. Plenty of absorbents should be used about the stable; the best thing, perhaps, is straw or planer shaving, but, in addition, liberal quantities of gypsum should be used. Some people apply manure at all times of the year with apparently good results, but I cannot help but believe they suffer great loss from manure "burning out" when applied during summer. Apply in January and plow under deep, is my advice.

The above gives but the crudest outline of two methods of maintaining soil fertility, both very economical, yet of great value to the grower. But they will doubtless be insufficient to give such thrift to the trees as will compel the heaviest of crops. Hence recourse must be had to artificial or so-called "commercial fertilizers" to supplement the use of the natural fertilizers.

Commercial Fertilizers.—These artificial fertilizers can be had in any form desired, from the complete—that is, containing all the elements required for any crop—down to the crude material containing only one element. But in purchasing any material, bear in mind that the same conditions obtain in artificial fertilizers as in the soil—that is, it may contain a large percentage of the elements needed for plant food, but which may not be soluble or available to the rootlets of the growing plants. For instance, phosphoric acid in the form of some untreated rock phosphates may lie in contact with the roots of trees for years, yet do no good.

The same may be true, to a certain extent, of bone-meal, although the bulletin of the New York Experiment station at Geneva gives a table in which it shows that on medium, cultivated soil 60 per cent of its fertilizing constituents remain at the end of the first year, 30 per cent at the end of the second year, 10 per cent at the end of the third year, and at the end of the fourth year all was absorbed. The same table gives exactly the same percentages on stable manure. But the greatest objection, perhaps, to ground bonemeal as a source of phosphoric acid is its cost. One Pomona grower informs me that this year he has been getting laid down in Pomona available phosphoric acid, at the rate of 5 cents per pound, in the form of imported rock phosphates. Of course, phosphoric acid in the form of Thomas slag can be laid down at coast points still cheaper, but it may be a question if that can ever be made entirely available.

In purchasing nitrogen, considerations must be had as to the requirements. For tree and wood growth organic sources are preferable; but with fruit, especially with oranges, care must be had, or coarse, woody, puffy fruit will result. For fine, smooth, juicy fruit, with good keeping qualities, I think nitrogen from the minerals far better.

Potash is especially demanded by all the fleshy fruits, and the grower should take great care to supply it. The most common forms of applying it are sulphate and muriate of potash and kainit, the first mentioned being the highest-priced and best, although of variable composition. It should be bought of reliable dealers. Experiments have shown that some plants do better with muriate, while others do better with an application of sulphate. For instance: peach trees take up muriate with better effects, while the orange takes to the sulphate.

Home Mixing.—In any case, I think it advisable for the grower to buy the separate ingredients and mix his own fertilizer, or equally as well, in my opinion, is to broadcast each ingredient on the land and plow under very deeply.

Freight on the higher-priced material is no more than on inferior goods; therefore, true economy calls for high-grade goods. It does not cost so much to spread, and in every way is more economical.

If mixing is done on the ranch, we must confess that it will take a better understanding of farm chemistry than some farmers possess; but let the farmer apply himself, and that understanding will soon come, and he will soon find that the application of brains is more economical than that of dirt with which some commercial fertilizers are mixed.

Varieties of Citrus Fruits to be Encouraged.

By W. C. FULLER, of Colton, at the Fruit Growers' Convention at Riverside.

The locality division of the two great citrus fruits is clearly established by the present and past impulse in planting. The interior counties of San Bernardino and Riverside represent in their acreage and trees about 60 per cent of the total State acreage devoted to the production of oranges.

The two counties of San Diego and Santa Barbara have nearly 50 per cent of the total acreage devoted to lemon culture. The two climatic extremes, San Bernardino and Santa Barbara, are devoted to their special growths—San Bernardino to oranges and Santa Barbara to lemons. This division is not based

upon the inability of the interior counties to compete in the production of the lemon, but to its season of ripening and the extra expense of curing and holding for a profitable market. It is impossible to produce a sweet orange and a sour lemon, under the same climatic conditions at the same time. The aim of the orange grower is to increase the production of the sugars in the fruit, which is always accomplished by the destruction of the acidity. The aim of the lemon grower is to retard the production of sugar, which is always accomplished by the destruction of the acidity. The intermediate climatic conditions for both oranges and lemons is Los Angeles county, whose county production is third in oranges and second in lemons.

These natural boundaries in production are controlled by the laws of organic growth and the laws of the market demand, built upon the natural needs of consumption. They will, with minor changes, remain as now outlined, as the coast and inland productions. These two natural divisions of citrus culture should be encouraged. They are not competitive but co-operative.

We have now arrived at a point in orange and lemon culture where we can affirm the conditions to be followed for controlling, to a large extent, the future efforts of the industry. The two great areas of lemon and orange culture are pretty well defined. This gives us the choice of localities as to these varieties. Our immediate section will be in the future, as in the past, principally devoted to the orange.

Importance of Varieties.—In our treatment of orange culture and the selection of varieties, it is inevitable that the California grower must discard every feeble and unprofitable fruiting variety and competitive varieties for varieties that will meet the tastes and demands of the market. To make this possible some localities will produce one or more varieties best suited to an early market, an intermediate market and a late market, and selection of varieties should be made with reference to these local adaptations.

Choice of Locations.—We must also, to remove unprofitable market competition, discard some soils, altitudes and thermic conditions as unsuitable for orange culture. A locality with orchards growing a little of every variety will be at a disadvantage with a locality that devotes its energies to a few varieties best adapted to its local conditions. Our first choice of varieties is between the necessity of growing a number suitable to the local climatic conditions and the advantage of growing and marketing a single variety.

Grouping Orange Varieties.—The varieties of oranges may be divided into groups as to their seed production or staminate power, and Mr. Fuller gave an elaborate analysis of varietal characters and their significance. The conclusion in favor of selecting toward the best types as affecting the varieties now chiefly grown is as follows:

In our selection of varieties, ordinary care will keep up the excellent qualities of the St. Michael, the Malta Blood, Hart's Late. The Ruby Blood will require more care in propagating, as it will tend to vary more from its best type. Our orchards should produce a limited quantity of all these varieties. The Japanese varieties have a limited sale, with Florida as a very hard competitor in this line of fruit. The grape fruit will soon be planted to its limit. The best proved variety seems to be a fruit with a very small oil cell, light in color and well filled with seeds.

Varieties with Seeds.—With the seedling type I include, besides those named, the budded seedlings as the Konah, Wilson, Old Vina, Red St. Michael, Homosassa, Magnum Bonum, Jaffa, Joppa, Mediterranean Sweet and the common seedling. The seedling type must be maintained and improved, and although it has been outranked by the Navel type, it still has its place in the market. The Mediterranean Sweet or some fruit like Hart's Tardiff will continue to satisfactorily meet a market demand. From the other seedling type we should have an orange high in color, thin skinned, with a limited number of seeds. This orange should mature at the same time as the Navel. With these qualities the seedling orange would be a companion fruit for the Navel, and one orange would sustain the other in price. The seedling can be grown in its improved types to meet an early and medium early market. The climatic conditions of Porterville ripens its fruit nearly as early as in Florida, and sections in our counties produce a seedling for the medium-early market of undoubted excellence. It is certain that the common seedling is outranked by the later budded-seedling types, and its production must be replaced in most localities by selected budded varieties, with the purpose of making an auxiliary orange to market with the Navel.

The Navels.—In the Navel type we must discard the Florida bud, the Australian bud and all intermediate types and tendencies. The best type of the Tibbett's Navel bud stands pre-eminently above all other orchard varieties now in planting. The orange and tree grown from the "Botanic Garden" bud is of equal excellence and shows its vigor by an abundance of thorns in its growth. I have not observed the habit of the later buds received from Bahia

which are now fruiting in Riverside. The Navel is the only orange grown in California that can exploit the foreign market to dispose of its surplus over the home consumption with any guarantee of a profitable return.

The Navel type is more likely to vary than any other type. The lines of its variation are first its power to change to adapt itself to different climatic conditions. These changes are shown in its ripening early or late in high temperatures and altitudes or in lower temperatures and planes. In high temperatures and altitudes the tendency of the bud is to vary its oil cells, detracting from its protective quality.

Its next variation is seen in the effects of soil and care, conditions that vary its color, weight and earliness. Its most serious variation is the inherited tendency to reversion. This tendency tends to change the position and size of the Navel formation, either to produce an abnormal fruit and often a monstrosity on the one hand and a seedling-Navel on the other. The last tendency is inherent with all varieties to sooner or later deteriorate into worthless, worn-out fruits, without the stamina to withstand the ordinary vicissitudes of average climatic changes.

Orange Production.—Shall we encourage and extend the area of orange culture? While there is no accurate census of the area devoted to either oranges or lemons, the number of both varieties may be safely assumed to be not far from 6,000,000 trees. The plantings of each variety is unknown; it can be only approximately estimated. From the tabulated reports of 1896 it may be assumed that there is a total of lemon trees amounting to 1,500,000. This would give us 4,500,000 orange trees. A production from this number of trees of one and one-half box per tree will give us 6,750,000 boxes of fruit, or 22,500 cars containing 300 boxes to the car. More than one-half of this output is the Navel.

Demand for Oranges.—In calculating the normal market demand for oranges we must conclude from this season's consumption and the probable demand to the end of this year as equal to 15,000 carloads. This gives us a normal market for the consumption of 200 carloads to each million of people. The sales to this amount have been disastrous this year. The purchasing power of the market is not yet normal, and the fruit is not of such uniform excellence as to entice purchasers. Under normal consumption, with the American market assured, can be relied upon as the market demand in competition with other varieties of fruit. The increase of this demand is in the increase of population and the distribution of this population. The increase of population is about 1,500,000 per year; at this rate our market demand will increase 300 carloads per year. How far this increase of consumption can be maintained depends upon the industrial developments of the nation to increase its purchasing power.

Relations of Varieties.—Based upon the normal estimate of 15,000 carloads as the market demand for 75,000,000 people in prosperous circumstances, I give this estimate as to California production of the different varieties: Navels (best type), 7500 carloads; Seedlings (selected types), 2000; Mediterranean Sweets, 2000; Hart's Tardiff or Valencia, 1500; St. Michael, 1000; Bloods (Ruby and Malta), 500; Tangerine and Mandarin, 250; Pomelos, 250; total, 15,000 carloads.

The season of each variety is as follows: Navel and Seedlings, November to May; Blood, March to June; Mediterranean Sweets, April to July; St. Michaels, May to July; Tardiff, June to September.

The question arises, Can we increase the citrus consumption either as to varieties or as a whole? There are two varieties that can exploit a foreign market: the Navel and Tardiff. The present setting of Navels will compel us to do this, as we will have an excess for the home market in a few years. The possibility to increase the home market consumption, which is a normal consumption as to California fruit of eleven oranges per capita, depends upon the fixed and voluntary expenses of marketing and the grower's profits.

ENTOMOLOGICAL.

Orange Peel Worms and Mexican Orange Maggots.

By ALEXANDER CRAW, State Quarantine Officer, at the Fruit Growers' Convention at Riverside.

In the fall of 1878 I observed in the orange groves of Los Angeles a few prematurely colored oranges, and, upon investigating the cause, I found in each a small cylindrical-shaped caterpillar, with six spiny legs and ten abdominal or pro-legs. I at first supposed this was identical with the "codlin moth" larvæ (*Carpocapsa pomonella*) in apples and pears. They, however, lacked the pinkish tinge of the latter and when disturbed or removed from their burrows in the skin of the orange they were very active and squirmed in a lively manner, suspending themselves by their silken thread.

About the entrance to their burrows is frequently

found considerable of their silk, spun in such a way as to indicate that it was intended to protect them from the attack of other insects or birds. I bred the caterpillar to the moth and in this stage it is very distinct from the "codlin moth." The bronze tips to the wings are wanting and the moth smaller. I exhibited dry specimens of the perfect moth and larvæ in alcohol, together with other injurious and beneficial insects found in the orchards of the southern counties, at one of the first citrus fairs held in Riverside. At that time I estimated that not more than one orange in a thousand was attacked by this worm in Los Angeles groves, and this estimate has not been exceeded since then.

Prof. A. J. Cook, the entomologist of Pomona College, Claremont, is a very careful observer, and his estimate for this season is the same, as the following note to me, under date of Nov. 23, 1897, will show: "Do you know the little tortricid larva that works in the orange? It is quite bad this season. Perhaps one orange in a thousand attacked."

The worm has been found every autumn since 1878, but did not attract any special attention until last fall, and that was caused by the reports published in several of the local papers regarding the seriousness of the "Mexican orange maggot" (*Trypeta ludens*).

While one-tenth of one per cent damage to a crop may appear trivial, and would generally be overlooked by the grower, still it was sufficient to cause uneasiness in the minds of California orange growers, and more inquiries were made regarding it than ever before.

A False Alarm.—A shipper of Sonora oranges saw in the general alarm that was created against Mexican oranges that it would materially affect his business, so he circulated a statement that the "Mexican orange worm" already existed in California. This was widely copied. A party in Riverside wrote to the San Francisco Chamber of Commerce and extracts from his letter were published in the press of the State. In part, he said: "Nearly all the oranges now being shipped into this country, as you doubtless are aware, are reeking with the destructive orange worm." Such a statement could not have been assuring to our orange growers, and naturally would lead them to suppose that their interests were not properly guarded by the State Board of Horticulture. I am in a position to know that the statement was not correct, as California receives no oranges from the State of Morelos, where the orange maggot is found. The few importations that have been received from the western coast of Mexico have been found clean. The fruit upon arrival is carefully inspected, sound oranges are cut open for examination, and any that look suspicious or show any evidence of decay are carefully dissected, but so far no trace of worms or maggots have been found. Mexican limes and "sweet limes" coming into the State from Central America are also inspected.

Precautions Against the Maggot.—Last year I requested the General Freight Agent of the Mexican Central Railway Company to caution their shippers against sending oranges to California, for, in the event of the fruit being found infested with the Mexican orange maggot, it would be immediately destroyed. In reply, he said: "There will be no shipments of fruit from this country to California; and, according to the best information now at hand, there will be no shipments of oranges from the State of Morelos to any point in the United States during this season, as these oranges did not give satisfaction last year." While this was partially assuring, there was no guarantee that the orange growers of Morelos would keep their fruit at home, so a strict watch was maintained. I called the attention of the Department of Agriculture to the necessity of a quarantine station being established at El Paso and Eagle Pass; but, in the absence of federal laws, nothing could be done.

The Southern Pacific Company, through their General Freight Agent, Mr. Wm. Sproule, has rendered us valuable assistance in this work. Fruit growers will see by this that everything that could possibly be done under our laws has been attended to in preventing the introduction of such a pest.

With the passage of a correctly drawn national horticultural quarantine law, such fruit would be excluded not only from California, but from the United States. In order that orange growers may not become unnecessarily alarmed upon finding a worm in an orange, I will point out the prominent characters of the two.

Description of the Maggot.—In the case of the Mexican orange maggot, no external indication of its presence is manifest to the ordinary observer in the appearance of the fruit. If any spot or discoloration is noticeable upon the skin, the surface should be cut so as to reveal the inner skin. If it is the work of the *Trypeta*, a small perpendicular hole will be seen to pass through that and enter the pulp. This is where the very small maggots have burrowed into the orange. Some oranges will have as many as eight or ten maggots. Specimens of the full-grown maggots collected for me at my request by Mr. Albert Koebele in the State of Morelos, Mexico, were fully half an inch in length. From the sharp-pointed head the cylindrical body increases in diameter, and to the unaided eye the abdominal extremity has the appearance of having been cut off. The color of the

maggot is a dirty white to a pale yellow when put up in a diluted solution of formalin. When an orange contains a number of maggots, the pulp will be partially consumed and will yield under pressure of the hand. The puparium is dark brown, oval in shape and measures three-eighths of an inch in length. The perfect fly, bred by Mr. Koebele, is yellow or rather ochreous in color, with a few scattering black hairs upon the thorax and head; the body and legs are covered with very fine short hairs, but not sufficiently dense to obscure the yellow color. The large compound eyes are dark and prominent. The wings are transparent and beautifully banded or dashed with yellow near the base and along the costal vein, with two interruptions to the tip. The bands cross the wings obliquely and are yellowish; at the tip of the wing, and near the posterior margin, the markings are dark, or rather clouded.

The larva pupates in the ground, and, according to Prof. W. G. Johnson who bred them in confinement at Champaign, Ill., in January, 1896, they took thirty-eight and thirty-nine days to pass through this stage of their existence, emerging as perfect flies from the last of February to the 3rd of March.

Prof. Lawrence Bruner conducted similar experiments and they took forty-one days. We thus have very positive evidence as to the time required for them to pass through this quiescent stage. In this time fruit cars packed with infested oranges in Morelos could be hauled to Chicago and the fruit removed, possibly leaving some larvæ that had concealed themselves in the dirt and rubbish on the floor. The cars could be reloaded with other freight or sent out here empty to the orange districts, where, before reloading, they would be swept out, leaving the flies to develop where they would find abundance of food for the propagation of their kind. This is not a very pleasing condition of affairs to contemplate; but, unless the Government prohibits the importation of oranges from those infested districts, we will soon find our famous Navel and other oranges things of disgust.

The Peel Worm.—The distinguishing characters of the "Mexican orange maggot" from the "peel worm," found here, are that the former is footless, works in the pulp and has no silken thread, whereas the "peel worm," as heretofore stated, has six spiny legs and ten pro-legs and spins a silk thread with which it can suspend itself, and also spins a cocoon to protect the chrysalis in its transformation to the winged moth. If the larva completes its growth before the orange drops, it spins its cocoon among the leaves. The complete life history of this moth is not known, but it appears to have only one generation each year, or at least only one that attacks the fruit. It must have some other food to sustain its kind, for larvæ that I have bred in confinement only remained fourteen days in the chrysalis before changing to the perfect moth. In this rapid development they differ from the codlin moth, as the latter remains in the larva and chrysalis state in their cocoons under the rough bark and other such places from September until the end of March or April.

The moth has a wing spread of nearly three-fourths of an inch; the fore wings are brownish, with dark markings at the tips and where the wings overlap each other over the body. The hind wings and legs are silvery.

How to Fight the Peel Worm.—Considering the time this moth has been with us, and the fact that there has been an abundance of fruit for its increase, I am inclined to believe that it will never become a serious pest. However, every precaution should be taken to check it. Probably the best method is to have a man or boy go through the orchard every day during the time the oranges are coloring. When an orange has been attacked, it drops to the ground and generally the worm remains in the fruit. With a single blow with a hoe a hole 8 inches deep can be made, the orange pulled into it and covered up. As this moth makes its cocoon and chrysalis above ground in the dry leaves, it will be impossible for it to escape when buried to such a depth.

Spiders love the protection afforded by the ever-green foliage of orange trees, their webs capture the moths, so they should not be disturbed. Another important aid is the bats, and, like the spiders, they delight in the dense shade of the orange tree where they suspend themselves among the leaves during the warm day and at night they sally forth to capture moths and other night-flying insects. Paris green and arsenical poisons are injurious to citrus trees, so should not be used.

A Skin Miner.—In Central America a "miner" attacks oranges, burrowing through the oil-cells of the skin when the fruit is green. When the orange is ripe the meandering course of the "miner" is noticeable by the drying up of the skin over the part attacked. Before the orange matures, this worm leaves the fruit, so we have not been able to find it. No oranges are brought from that district in a commercial way, but are sometimes found in the possession of passengers and are promptly destroyed. Such a pest would impair the appearance and market value of the fruit, but from the time and manner of its attack I doubt if it would cause the orange to decay.

A Japanese Peel Worm.—In Japan a "peel worm" is found that is similar to ours in its work, and prob-

ably identical. It must be a rare insect there, for it is very seldom we find an orange that has been attacked. All the oranges are fumigated with extra strength hydrocyanic acid gas in air-tight rooms before they are permitted to be placed on the market. When the fruit is treated during the day it is shut up for not less than three hours and the last batch remains in the fumigating chambers all night. Under such treatment the danger of introducing insects is reduced to a minimum.

FRUIT MARKETING.

How Can We Best Dispose of Our Dried Fruit?

By COL. PHILO HERSEY of San Jose at the Southern California Fruit Growers' Convention.

The dried fruit product of the Pacific coast is assuming large proportions. With increased acreage coming into bearing and improved cultivation, it must of necessity become still greater. There are yet large areas of excellent fruit-producing land, and the tendency is to utilize it in planting trees, regardless of the question of marketing or of overproduction.

It is safe to assume that within a few years the largest production of any one season thus far will be doubled. In the year 1897 the product of dried fruits in California and Oregon, exclusive of apples and raisins, was 150,000,000 pounds, of which 100,000,000 pounds were prunes, 25,000,000 apricots, and 25,000,000 pounds peaches and other fruits.

The Export Avenue.—It is gratifying to state that a market for the entire amount will be found before the consuming season closes; 125,000,000 pounds will be consumed by the United States and the balance in foreign markets. The export trade has exceeded all precedent, and has relieved the home market to such an extent as to make it possible to dispose of the large majority readily.

The shortage in the foreign product and the favor in which our fruits are held in Europe has wrought greatly to our advantage.

This advantage we cannot always have in assurance, as a good crop in Europe in the chief product, prunes, is in excess of the European demand.

However, our apricots, peaches and pears will continuously take precedence in Europe, and we may look forward with assurance to a good export demand for these goods.

Home Markets.—The home market for 1897-8 has exceeded all former years, and it is reasonable to believe that with increasing population, improved quality and extended familiarity with their use our dried fruits will be consumed in largely increased quantities.

Enormous as the use of 125,000,000 pounds by our people seems, still each individual has to consume but one ounce in two weeks to cause it all to disappear, and if by custom, chance or desire for luxury the demand rise to one ounce per day, we would have to import 1,625,000,000 pounds or increase our production 1300 per cent. And this is making no provision for Hawaii or Cuba.

Surely our people cannot yet be surfeited or made sick by being overfed on California dried fruits. Still, we have some difficulty in profitably disposing of the present production, and look forward with some tremor for a profitable disposition of our prospective increased production.

Our main reliance must be on the home market, or among the people of the United States. The chief question is, how can we distribute our product so as to reach the great majority of our people? Upon this question I have nothing new to offer, but I desire to state with all possible emphasis that which is old, and that which I am positive is the best course for us to pursue.

The Fruit Trade.—We have in the United States about 2000 establishments devoted exclusively to the sale and distribution of food products at wholesale. There are many others that combine wholesale and retail trade. These establishments employ from 12,000 to 20,000 bright, active, intelligent and energetic traveling salesmen, who through the entire year repeatedly visit each city, village and cross road where people dwell and sales can be made, urging the use and consumption of their goods and wares.

These emissaries of the wholesale trade reach more people, do more talking, extend and enhance more the interests of trade in any accepted line than all other means combined. They are backed by unlimited capital and are ever ready to take up any line of productive industry wherein profit, however small, is reasonably sure. This vast, intense, rapidly moving army, with all its attendant capital of money and energy, is at our command, ready at all times as a whole to serve and befriend us, so long as we stand by it. It constitutes the accepted method and approved channel of trade. It is inwrought and embodied in the agency of domestic commerce, and but little is effectively done outside. This establishment and the emissary constitute the sole purchasing and distributing power worthy of our consideration or patronage. The best and broadest use of

this established means of trade should be made. It is true we now make use of it, but not to the best advantage. For five successive years we have negated its efforts and absolutely failed in securing its good will or earnest co-operative assistance. In the early season of each year we have sold the trade f. o. b. cash, or "cash on arrival and inspection," a full supply for the opening market at a price mutually agreed upon, bearing profit to the producer and satisfaction to the purchaser. Immediately upon the sale and shipment of this temporary supply, the f. o. b. price has been broken, large quantities, to every important market, consigned and sold for what could be obtained upon a supplied market; or the grower has sold to agents of Eastern houses that have awaited the temporary lull in trade in order to prey upon the ignorance, credulity or financial distress of the grower, and buy his product at a price enabling him to sell at a good profit for the same price his neighbor merchant's supply cost.

In the early season of 1897 2600 carloads of prunes were sold f. o. b. cash, or "cash on arrival and inspection," at prices mutually satisfactory to seller and buyer. This was an unprecedented sale, and should have been so satisfactory as to have permitted its distribution from the buyer's or wholesale grocer's hands without paralyzing his efforts by pressing further immediate sales.

This, however, was not permitted, and when the sales temporarily stopped hundreds of producers increased their anxiety to sell, and, persuaded by commission men, agents and curbstone brokers, reduced prices and demoralized the market, which very effectively stopped sales at any price but speculative ones, and defeated themselves.

As a consequence the usual conditions followed. Six hundred cars were consigned, others sold locally for what they could get, and the price so reduced as to incur the unnecessary loss of \$120,000 to the grower, on what was left in his hands, and at least \$150,000 to the early purchaser—and no one, not even the consumer, benefited.

This is simply a repetition of things done for five consecutive years by the grower, who does not seem to gather wisdom from experience, or profit from the wisdom of those who advise from experience. In fact, he will generally believe anything but the truth, help anybody but his friends, and injure no one but himself.

It is possible that I am using plain language with some freedom, but for real enthusiasm in its sublimest flights it is only necessary to observe the Eastern merchant in describing the fruit grower's methods, rise in his wrath and use language which, although found in the Bible, is so transformed and intense as to lead one to believe its heat and fervor had been engendered where sulphur is said to be both convenient and in abundant supply.

There is really some cause for much of this criticism of our muddled and motley methods. We seem to have but little faith in each other, and none abiding in ourselves. We lack both unity and harmony, and in our individual efforts at self-aggrandizement or self-preservation we fail to recognize or grant assistance to those of necessity transacting our business and distributing our product.

Suggestions.—We must devise some means of gaining and retaining the confidence of the trade, and help ourselves by helping others. There are some things we must do, and some we must not, if we wish as a whole to prosper:

First—We must bear in mind that our product is to be eaten by people as delicate and fastidious as ourselves, and hence be made attractive, cleanly and of the best kind. In other words, "make sweet pork out of sour prunes," or offer nothing for sale the quality of which would deter us from buying for use.

Second—Cease to attempt to sell to a supplied or unwilling market. The market will always buy what it can sell. It is absolutely ruinous to force goods on a supplied market. More goods can be sold at higher prices by awaiting the market's move, and the trade is surer of profit and exerts greater energy.

Third—There must be (if it is within the possibilities of the farmer's nature) greater combination and concentration of our product, that the producer may be protected and cared for, and the market supplied as its needs demand, and thus avoid overstocking, reducing prices, and causing a feeling of apathy on the part of the trade.

Fourth—I believe we should do more good of our own (and I mean by our own the grower's) business and thereby make it more difficult for the army of adventurers, having neither capital nor character, to become go-betweens for the grower and merchant. This will save competition, insure a steady market, a higher price and a saving in the transaction of business. The savings of the association of growers of which I am a member have been for this season, in the transaction of its own business, \$12,000.

If the individual fruit grower will overcome his egotism and accept the fact that his "little patch" is no better than other little patches, produces no better quality, and cannot control or "bull" the market of the entire world; will try to do something in a general way for the general good; will place more confidence in men and things he does know

than those he does not, and will follow somewhere in the line of the suggestions here made, I am assured that the question, "How can we best find a market for our dried fruits?" will be settled for many years to come.

THE IRRIGATOR.

Pumping for Irrigation.

By S. W. LUITWEILER of Los Angeles at the Fruit Growers' Convention.

It is a well-known fact that in southern California at least all the water obtainable by natural flow has been appropriated. There remains but one other source whereby a sufficient quantity can be had for irrigation purposes, and that is by means of wells, either dug or bored. In what way shall we raise a sufficient quantity to meet our demand? This is a subject that many are interested in just at this time. When the owner of a piece of land is fortunate enough to have an inexhaustible supply underlying his land, within easy reach, it is not a difficult question by any means.

Centrifugal Pumps.—When an abundant supply can be lifted without going to a greater depth than 40 feet, the centrifugal pump is without doubt the best pump for this duty on account of its cheapness and simplicity. It requires but little care—is always ready for use. While the best centrifugal pumps do not range over 50 to 60 per cent efficiency, varying according to the work, still they have so many good features that they cannot be overlooked for any work within their range. There are two classes of centrifugal pumps. The horizontal, adapted to work within 25 feet suction, is placed upon the surface ground and is quickly and cheaply connected to the driving power by means of a belt. The other—the vertical centrifugal—can be placed in a pit, taking care to submerge the pump runners under water in order that the pump may be always primed and ready to start. When the water to be lifted is to be had by a bored well at the bottom of a pit, the suction pipe may be dropped into the well pipe to a depth of 25 feet. The vertical shaft from the pump below, extending to the surface of the ground, or a little above, carries the pulley which drives the pump. Centrifugal pumps may be made to deliver water up to 100 feet economically by delivering the water from one pump to the other, either vertically or horizontally. This is seldom done, as the conditions under which they may be operated rarely present themselves. Taken under all conditions, when they can be used for the raising of large quantities of water cheaply, and considering the low cost and long life, the centrifugal pump is always to remain the favorite. By this I mean, of course, the best makes of centrifugal pumps.

Somewhat similar in operation to the centrifugal is the rotary pump; but on account of its short life and friction in its moving parts it is not used much.

Deep Well Pumps.—The other class of wells, which do not come within the range of centrifugal pumps, and which are generally located along the foothills or on the mesas, are known as deep wells, and require special pumps. Until lately this class of wells were operated wholly by plunger pumps, worked by cranks, either single or double acting. The single-acting pump is one of low efficiency, and for lifting large quantities of water is wholly unsatisfactory. There are several styles of double-acting pumps, all constructed for the purpose of throwing a constant stream; some do, others do not. The best of this class of pumps are those which do the work on the lifting stroke, as they have a greater range, and the pressure employed to do the work is against the foundations. The latest candidate for public favor in the line of either deep well or suction and force pumps of large capacity is the Triumph cam pump. This pump is not only a double-acting pump in the fullest sense, but it delivers a steady continuous flow of water, the speed of which is without any variation. The advantage of this is that it employs the power at all times in lifting. Describing the mechanism of this pump: There are two heart-shaped cams on one shaft set opposite to each other and so arranged that they, in rotating with the shaft, cause the rods which are on either side of the cams to move up and down in a vertical line; between the rods, which are flat, is located a roller, which, as the cams rotate, carry the rods up and down without the usual friction, as in cam pumps. The buckets in this cam pump descend more rapidly than they raise. By this you observe that while one bucket is coming up, and as it is about to finish its stroke, the other bucket goes down quickly and commences to take the water before the one lifting has finished. While there is a change of speed in the rods and buckets, the gears do not speed, as is done in some action pumps. The cam pumps have no dead centers, no cranks, no water hammer, need no air chambers, have the highest efficiency, will work in all wells; as simple as a car wheel running on a rail and about the same proposition, only the rail is in motion and the grade changes every revolution.

Compressed Air.—Another method of raising water is by compressed air. Under certain favorable conditions this system works well, but in many cases

will not work at all. When a group of wells owned by one party are to be pumped, and when the water is not too far below the surface, it is the best system to use, as it would be expensive to pump a number of wells by putting separate pumps and power to each well. I made some experiments some years ago in pumping single wells by compressed air, but saw nothing to warrant the use of air for this purpose. Upon investigation, I found the best methods for performing the work covered by patents which are still in force. The only way left to lift water by compressed air, and not patented, is to blow the water out of the well pipe by the volume of air. This plan is not very efficient, as the air can escape through the joints in the pipe, and, as we use short lengths of riveted pipe in our wells, making no pretensions at getting close joints, this plan is more or less wasteful. Air is very hard to control, and the joints must be much tighter than is used to convey water, as a very small leak will pass a large quantity of air under pressure. While the air-lift people claim no valves are used in the well, there are several used in the air pumps and of a more delicate nature than is used in water pumps. The Poble, Titus and other patents cover the right to use a separation pipe for the delivery of the water. This pipe extends down into the well, as does also the air pipe, which delivers the air into the water pipe at the bottom. In operation, the air arranges itself into air pistons, with water pistons, alternately an air piston and a water piston throughout the whole length of the discharge pipe. This patented air lift system has a much greater efficiency than can be had by other methods using air, and is considered the best means of lifting water from a group of wells at one time; but I would not recommend lifting water from single wells where pumps would do the work, first, because of its higher cost; second, because air compressors are very delicate machines, the pistons have very little clearance in the cylinders, and often the use of too much lubricating oil will cause them to hammer or pound; third, they should be used only in a well-built room, free from dust, as dust or grit soon cuts them out, and this county is very dusty at the season of the year when we need water for irrigation; fourth, air compressors must necessarily work very close in order to pump air, which is the thinnest substance with which a pump has to deal, and leaky air pumps are hard to conquer, and the loss in efficiency is much greater than that with leaky water pumps. Mr. Geo. D. Whitcomb of Glendora, a gentleman who handles air pumps largely and has sold them for many years, in conversation a few days ago said: "Don't you ever put air pumps in the hands of farmers to pump water with. I consider the water pumps better adapted to this work."

Gas Engines.—Now, a word in regard to the cheapest method of raising water and I will close. During the past eight years I have installed several hundred gas engines. The larger part of them have been used for pumping, consequently I speak from my own experience and of others as well. A good gas engine working on distillate will produce horse power for about 1 cent per horse power per hour. They are automatic in their operations and require little attention. I have known engines to work day and night for a week without stopping, while the attendants, having the three engines in charge and located a block apart, did not visit the engines oftener than two to three hours, and then to oil them. Using steam requires the constant attendance of the engineer as a matter of safety, the cost of fuel is double, and when boilers are used the wear and tear is considerable, as well as loss in time of getting up steam. The water used in boilers here soon forms a deposit on the tubes and it is hard to keep up steam. To keep the tubes clean and free from this formation is no small expense. Electric power will soon be an important factor in irrigation, but I doubt if its use will become general, as the cost of poles and wires to carry the current will not admit of going much distance from the main line. Where farmers cannot afford to put in individual plants for pumping they should combine efforts, form a small water company, with themselves as directors, and agree upon the delivering of water and expense incurred in pumping, etc., having the same business organization as any corporation. I see no objection to this, and the expense would be light on all. This plan would be especially applicable to orchardists with small holdings.

CEREAL CROPS.

Siberian Wheat Not a Menace.

California wheat growers have shared in the common apprehension that possibly when the great Russian transcontinental railway is completed it will open great wheat supply regions and affect the demand for American wheat and flour both in Europe and in the eastern Asiatic countries. There seems to be much doubt whether any such influence will be exerted. U. S. Consul A. Burlingame Johnson of Amoy reports to the State Department quite fully on these questions.

American Flour in China and Japan.—Within the present decade the exportation of flour from the

United States to China and Japan has assumed proportions that give encouragement to the industry, while there seem to be great possibilities in that line in the near future. China is capable of almost unlimited consumption of any article of food, the price of which can be brought within the reach of her many millions. The construction of the great Transsiberian railway, terminating on the far eastern seaboard, was thought by many of our exporters to herald the advent of a dangerous rival. The Siberian wheat fields have for many generations supplied Europe with a large percentage of its breadstuffs. If the new means of communication with the East resulted in enlarging the output and changing the course of the movement, cheaper supplies might cut off the American product. A careful review of the territory affected that will disclose the possibilities in that line and serve as a guide in the search for an outlet for the great wheat-producing sections of the United States, may not be out of place at this time.

Russian Cereals.—Among the cereals produced in the vast empire of Russia, the first place belongs to rye, the second to oats and the third to wheat. Of the country penetrated by the great railway or tributary thereto—i. e., the northern and northwestern provinces of Russia, as well as the central non-Christian governments—less than 2 per cent of the productive land within the reach of the railway is devoted to the growing of wheat. In the extreme south and southeast the cultivation of wheat assumes the first place; here, from one-third to one-half of all the lands under crops are sown to wheat. A glance at the map will show that the outlet for the wheat-producing country is found in the great inland seas, while the market is near by. To be more specific, spring wheat predominates in the extreme south, while in the east none else is sown. The chief centers for spring wheat are in the south and southeastern provinces, where transportation to the sea is easy, while winter wheat is grown chiefly in provinces in the southwest, of which Kiev is the center.

Movements of Russian Grain.—The Russian grain movements have been for centuries settling into the now well-defined grooves that control them. These movements, also, readily divide into four distinct groups: (1) The White sea, (2) the Baltic sea, (3) overland exports, (4) the Black and Azof seas. St. Petersburg, Reval and Riga have long been the chief ports in the north, while Odessa, Sebastopol, Rostoff and Taganrog are the points whence the exports of the south are made. The annual average export varies but little from one decade to another. Twenty years ago the Russian wheat export figures stood about as follows:

| | Bushels. |
|-----------------|------------|
| Baltic sea..... | 4,393,383 |
| Germany..... | 2,648,066 |
| Austria..... | 842,566 |
| Roumania..... | 300,916 |
| Black sea..... | 16,670,783 |
| Azof..... | 26,781,583 |

The principal export of the Azof seaports is wheat.

Russia as a Wheat Supply Country.—A statement of the movements of wheat from Russia during the two years 1889 and 1890, with the ports and countries of destination, the total quantity received by those countries from all sources, and the percentage from Russia, will give a correct idea of the position which Russian wheat occupies in the economy of the world and enable us to estimate the probable effect of opening up a new market for this product.

IMPORTATION OF WHEAT BY THE CONTINENTAL COUNTRIES AND THE PERCENTAGE FROM RUSSIA.

| COUNTRY. | 1889. | | | 1890. | | |
|--------------------|----------------------|-----------------------|---------|----------------------|-----------------------|---------|
| | Total Consumed. | Imported from Russia. | Pr. ct. | Total Consumed. | Imported from Russia. | Pr. ct. |
| Great Britain..... | Bushels. 109,383,116 | Bushels. 39,781,183 | 36.4 | Bushels. 112,843,915 | Bushels. 36,170,166 | 32.1 |
| France..... | 43,087,100 | 13,902,359 | 33.1 | 38,755,065 | 10,909,850 | 28.2 |
| Germany..... | 18,987,750 | 11,013,550 | 58.9 | 24,675,166 | 13,601,423 | 55.9 |
| Holland..... | 24,795,533 | 9,569,120 | 34.6 | 26,179,750 | 10,833,000 | 41.3 |
| Belgium..... | 28,165,800 | 3,972,100 | 14.2 | 32,920,283 | 3,490,633 | 10.7 |
| Italy..... | 32,017,533 | 23,230,766 | 72.8 | 23,652,050 | 16,971,700 | 71.8 |

Little to Come from Siberia.—A large percentage of the Russian wheat fields is in the country tributary to the great seaports, thus being brought in reach of cheap transportation to an unlimited market. Italy and Germany receive over 50 per cent of their wheat from these great sources of supply. Of the total exports but a very small percentage comes from the territory tributary to the great Transsiberian railway. Russia does not possess a properly organized internal grain trade. Hence, she is at present incapable of equalizing the surplus and supplying localities suffering from a deficit in bad seasons. The country has such immense distances and insufficient communication that no equalization of surplus or prices seems possible. For instance, a surplus of grain in the Yeniseisk or even in the Tomsk government cannot supply a deficit in that of Tobolsk, although comparatively near by. The danger that a surplus from any of these northern provinces will materially affect the markets of the world is obviously remote. The new railway will have served its purpose well if, within a generation, these widely separated provinces have organized

their markets so as to supply the ever-pressing local need. The wheat grown in the Altai, the steppe regions and the southern parts of the Tobolsk government now goes to European Russia, or, strictly speaking, to another part of Siberia, yet fails to supply the demand. The railway will but facilitate these meager shipments.

New Railway Will Not Increase Wheat Supply.—As before stated, wheat in Russia ranks third in the production of cereals, rye taking the lead and oats the second place. In view of this, I am of the opinion that the extension of the Transsiberian railway will not be followed by an increase in the exportation of Russian wheat: (1) Because the wheat fields in Siberia are not numerous or extensive, and where wheat is grown in the largest quantities the railway does not penetrate; (2) because freight by rail is too expensive to permit the carrying of wheat from the interior of Siberia to the frontier, thus enabling new fields to develop and materially affecting the world's market; (3) because the surplus in western Siberia goes only to the rural districts to supply the deficit of that country; (4) because that portion of the country suited to the production of wheat has long been under cultivation and is occupied by small holdings. Hence, it is not likely that there will be material change in the crops grown, and no increase in the surplus can be expected.

China Should Take More Wheat.—With a more favorable exchange, or an advance in the price of silver, China would afford an almost unlimited market for American wheat. Even though it now takes \$2.25 Mexican to equal \$1 gold, there is a steady increase in the consumption of American wheat in that empire. This difference in exchange brings flour up to \$6 or \$8 per 100 pounds to the consumer, who finds it no easier to secure the dollar in China than when there was only a slight difference of exchange and flour was selling in the empire for \$3.50 to \$4 per 100 pounds. If the Americans lose their market for wheat in the Orient, it will not be due to the development of Siberia and the opening of the railway to the heart of that vast country.

THE VETERINARIAN.

Veterinary Advice.

TO THE EDITOR:—I have a fine Jersey bull. For a year or more he has had large lumps on the side of his head—I think caused from bruises by fighting; seem to have proud flesh and will not heal; bleed a good deal. Will you kindly advise me what to do for it? Have used bluestone and lard made into a salve. L. E. GROVE.

Gertrude, Cal., April 3, 1898.

ANSWER BY DR. CREELY.

Give internally 2 drachms, daily, iodide of potash. Wash thoroughly once daily with warm carbolic water and castile soap; dry thoroughly; then apply over the raw surface the following drying powder: Oxide of zinc, 1 ounce; Monsell's salts of iron, 1 ounce; pulv. alum, 1 ounce; pulv. borax, 1 ounce; mix.

Let me hear in ten days whether he improves.

Chronic Indigestion in a Horse.

TO THE EDITOR:—I am very much interested in the answers of Dr. Creely to your subscribers through the columns of your valuable paper. I would like to ask him for a little advice. I have a horse which I use right along, and he has scours all the time. Diagnosis of the case, as near as I can make it, is as follows: I use him on a light coupe; I generally harness about 9 or 10 o'clock A. M., and generally get home about 7 o'clock P. M. I hardly ever drive more than twelve miles a day, generally standing waiting most of the day. I feed hay and about three quarts of ground barley morning and night. Now the horse has the scours every day. In the morning the manure is generally about normal, the same as in most all horses; but it gradually gets softer, till about noon it is just like mush, followed by a discharge of water. He, of course, keeps poor. He is always hide-bound, and his coat is rough. When the manure is soft, it is not more than one-half digested. I thought it might be his teeth, and I had them attended to about six months ago, but he keeps just the same. He eats and drinks well and his eyes look perfectly bright. I have a mare about sixteen years old that I work along with him every day, and she keeps all right. Now, if you will advise me what to do, you will confer a great favor on yours, Salinas, Cal., April 10, 1898. EDW. R. MUMO.

This horse is troubled with chronic indigestion. The first and most important thing is to remove the cause. The cause may be due to sharp or projecting molars, but if you have had the teeth looked after by a qualified veterinary dentist, that removes the first cause. It may be due to gluttony, as ravenous or quick eaters are apt to bolt their food, and the food would do no more good than if not eaten. The scours is due to intestinal irritation, and this may be due to unmastered food or worms. Feed no hay at night. A bran mash only is to be given. Muzzle him. Then the following morning, on an empty stomach, give the following purgative: Raw linseed-oil, 1 pint; Barb. aloes, 6 drachms; sweet spirits niter, 1 ounce; spirits peppermint, 1 ounce; mix and give all at one dose. The succeeding day begin with the following powders and continue until used, and write and let me know whether any improvement has resulted: Soda bicarbonate, 4 ounces; bismuth subnitrate, 2 ounces; tannic acid, 2 drachms; pepsine, 1 ounce; mix and make twelve powders and give one daily. It is well to advise the druggist to add the tannic acid to each powder separately. Feed either rolled oats or barley, and don't give too much water in the morning.

DR. CREELY.

SHEEP AND WOOL.

Better Outlook for Sheep.

The outlook for the sheep industry is quite inviting at present, and the shepherd feels encouraged. The depression was long and severe, and many disposed of their flocks and turned their attention to other branches of agricultural pursuits. Now that wool has advanced to a price that makes it somewhat remunerative, many are returning to their "first love," the sheep-fold, causing an increased demand and correspondingly higher prices. Common breeding ewes are now readily taken at \$4 per head, says a Michigan writer in the *Rural New Yorker*, and there seems to be a general desire among farmers to rush into sheep-breeding. When we consider that, twenty years ago, there were 35,804,200 sheep in this country, valued at \$80,892,683, and that on Jan. 1, 1897, 36,816,643, valued at \$67,020,942, and that the most prosperous time in sheep industry during the past thirty years was from 1881 to 1885, when the flocks of the country increased from 90,000,000 to 124,000,000, we are not surprised at the manifest disposition of farmers to buy sheep. It is noteworthy, however, that the flocks of this country reached highest value in 1892, \$52,398,019. When we consider the increase in population during the last twenty years, and corresponding increase in the consumption of wool and mutton, together with the return of prosperity, there can be no doubt in the mind of the man of average intelligence that prices must go higher for wool and mutton so long as the number of sheep remains at the present figures. The increase will be slow, from the fact that large numbers will be used to supply the markets with lambs, at a price which will, doubtless, prove tempting to the average breeder. I do not predict as large a return from wool as the farmer once enjoyed, yet I can not see any reason why, under the present conditions, wool should not bring 30 cents per pound for some years to come, which will make its production reasonably remunerative.

Fattening Sheep on Alfalfa.

The following is a portion of an interesting paper read before the Farmers' Institute at Sterling, Logan county, Colorado, by W. L. Henderson, a well known wool and mutton grower: The risk in fattening sheep is very slight. They may be fattened in from 90 to 120 days. The money invested can be quickly turned over. In fact, it is possible to fatten two lots of sheep in succession in the same yard during one winter and spring.

How It May be Done.—To illustrate how this may be done, I will have to relate some of my personal experience. Last season I secured 300 wethers from a range sheep man in the early winter months; they were ready for market in March; I disposed of them and bought again the first of April. Instead of putting them on hay and corn, I fenced off an alfalfa lot of about five acres. At that season the alfalfa had just started growing. I fed my flock corn three times a day. By so doing the sheep never grew hungry and never ate the green alfalfa to excess, and thus avoided any trouble from bloat. I found they thrived much faster than they did on dry feed, and by the first of June I sheared them and sold them for as good a price as I did those in March, and had my wool to sell at wool instead of mutton prices.

How to Avoid Bloating.—Here are a few points that deserve passing notice: The alfalfa-grazed sheep only consumed about two-thirds as much corn as the dry-hay fed sheep, and two-thirds as much time put them in better condition than those fed on hay. I saved the expense of handling and cutting the hay and avoided the accumulation of litter, etc., that it would have required labor to remove. I was told before I turned the sheep on the green alfalfa that I wouldn't do it but once, on account of the loss by bloat. But by keeping them

in the field night and day and giving them all the corn they would eat I avoided the trouble and expect this coming spring to feed a bunch in the same way.

To those who are disposed to try this way of feeding I will sound a warning of danger: If you should by neglect or other cause allow your sheep to get hungry and then turn them out to graze, you will be liable to lose your profits in less than an hour. The idea of sheep getting used to grazing on alfalfa is absurd. If they gorge themselves they will bloat and die, no matter how long they may have been grazing. Use judgment and care and you will succeed.

The Dog Problem.

The only reason Georgia does not have from 3,000,000 to 5,000,000 sheep, instead of 500,000, was that there were too many dogs in the State. The *Wool Record* recently suggested that the great trouble with agriculture in Georgia was that farmers raised too much 6 cent cotton and too little 25-cent wool. But another trouble of Georgia is that she grows too many mongrel dogs and too few sheep to feed them. The question, therefore, for her to consider is whether she will keep on raising dogs that are a tax on her resources or kill off the canine nuisances and cultivate wool-bearing animals which afford a source of revenue. It is a case of dogs or sheep. The two species cannot thrive in the same community. Experience shows that there are more sheep in the neighborhoods where there are the fewest dogs. If a man is raising curs, he should stick to it, and make his dogs stick to him, and if the owner of an adjoining farm whose sheep are kept within their owner's land finds his neighbor's dogs among his sheep he should kill the invaders as promptly as either he or his fellow farmer would lynch the incendiary who fires their barns. In Pennsylvania, Ohio and other great wool-growing States each county assesses itself to pay the farmer whose sheep are killed by dogs. In many instances this system of self-taxation on the part of local neighborhoods is burdensome at times, but in the long run it results in a system of dog killing which insures reasonable safety to the shepherd's flocks. In such communities any dog found in a sheep pasture is treated as an outlaw and killed on sight without a protest from the owner.

The Trade School.

One-fifth of the able-bodied population of the United States is said to be engaged in the mechanic arts. Such of these, and the number is by no means small, who are foreign born, had the advantages of a thorough-going system of apprenticeship and are equipped both by education and experience for their special phase of industry. To such men their aptitude for a business is a matter of second nature. It was not obtained by memorizing rules, but by normal training. It took time, in many instances covering six or seven years, and it involved discipline, not always of an agreeable, but always of a helpful kind. The modern, or rather the American idea, wants as little as it can of both, and the apprenticeship system is nothing less than a tyranny or a prolonged penance to the youth who thinks his parents and the world have made a mistake in not thinking him a man before his second teeth have made their appearance. It is a sad confession, but it's true, that in making men of boys we have made the native mechanic an exception and not a rule. It may have been a mistake in many instances of apprenticeship that the process of education has been unnecessarily slow, and that the cupidity of employers, rather than their good reasons, has managed to secure a man's aptitude at a boy's wages; but it is still a fact that in going to the other extreme we have incurred as many evils in the new system as were economically vicious in the old plan. One thing is sure: that we cannot subordinate the rising generation to the con-

ditions that have placed American skilled industries so largely in foreign hands. The escape lies in the trade school. This is an industrial necessity. In other branches of education outside of the industrial we are flooding the nation with youths, who, if as they think, are fitted for what are called the professions, are yet compelled by the surplus of supply to seek some form of manual labor for subsistence.

Out of every hundred boys that graduate from our grammar schools 1 per cent enter the ministry, 1 per cent become lawyers, 1 per cent physicians, 5 per cent business men and 92 per cent get a livelihood by their hands. The minister takes his course at the theological school, lawyers at the law school and physicians at the medical school; 5 per cent enter business houses to learn the business, which means years of training, but the 92 per cent—have they a similar training? One need not be a prophet to predict results. Want of occupation or a dislike to that into which some are forced by bread-and-butter necessities, leads men into crime. The prison statistics of 1890 show that there were 52,894 white male prisoners in the United States. More than one-half of these had no trade whatever, and three-fourths of those who became criminals through lack of occupation were Americans. It may not be that the lack of trade explains the lack of moral stamina or of integrity, but it is certain that with men who work there is less temptation to crime than with those who do not. If the 92 per cent of educated youths who are turned loose on the world with no knowledge of a trade had been taught even the rudiments of some industrial calling, they would certainly have a better chance of paying for their boots and board without leaning on their parents or a telegraph pole for support. We have an alarming population of this spineless and practically helpless kind, and so long as this special article is the product of a purely mental education, the nation must foot the bill. Under these circumstances we cannot long be blind to the necessity of the trade school. It is the missing link between the school boy and the self-sustaining man. The manual school is but a proviso. In the government consular reports it is stated: "The manual school work in favor with many experienced teachers in the United States, which aims only to impart to the pupil a general manual facility, and to develop adaptiveness, without direct reference to his ultimate specific vocation, is here virtually unknown." The founders of the engineers' school at Amsterdam say: "Our school is to train engineers to run the engines on our steamers," and the charter of the Rotterdam Trade School explicitly states: "The purpose of this association is to train able mechanics." It is on these practical lines of service that the trade school meets what is becoming more and more an industrial and national necessity.

The demand of the hour, the crying want of the age in every trade in every department of commerce, in every occupation, in every business, whether great or small, is for men and women who know how to do things, to do them accurately; to do them at the right time; to do them with neatness and dispatch. There are plenty of people who do things after a fashion, who are satisfied with loose-gear and slipshod methods, whose highest ambition is to get through the work of the day, the week or the month and draw their pay; who take no pride in their work, find no enjoyment in seeing the best possible results grow out of their efforts. If the "boss" will let it pass, it suits them all right, good or bad. They have no interest in the outcome of their labor, except that which grows out of being able to draw their pay, which they always want to measure by the time that has expired, rather than by the efficiency of the work they have done, or the profits which may have accrued to their employers. The only stimulus to activity which they know is a sordid one, and has relations to the cash it brings.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR WEEK ENDING APRIL 5, 1898.

- 601,697.—TREE PROP BRACKET—Ament & Evans, Riverside, Cal.
601,726.—BALL CASTER—G. L. Boveroux, Oakland, Cal.
601,850.—PROGRAM CLOCK—E. F. Burrill, Oakland, Cal.
601,887.—CAKE BEATER—A. W. Custer, New Whatcom, Wash.
601,795.—DRAUGHT EQUALIZER—G. F. Hillegas, Lane county, Or.
601,853.—VEHICLE WHEEL HUB—G. A. Krohn, Gold gulch, Cal.
601,835.—BATH GOWN—H. & H. E. Law, S. F.
601,972.—WINDMILL—R. Leonhart, Jr., Fresno, Cal.
601,668.—SHORE PROTECTOR—T. B. Loydal, Sacramento, Cal.
602,023.—DUSTLESS ROAD—F. W. Mattern, Los Angeles, Cal.
601,904.—BET DIGGER—L. Pike, Anaheim, Cal.
601,845.—ASH RECEIVER—S. M. Smith, S. F.
601,916.—ROTARY ENGINE—C. Triplett, Leland, Or.
601,743.—CULTIVATOR—J. A. Webber, Vancouver, Wash.
601,920.—PUMP—M. L. G. Wheeler, North Yakima, Wash.
601,694.—RESTORING INSULATED WIRE—N. Wilson, Portland, Or.
601,848.—BOTTLE—W. Wilson, Oakland, Cal.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

VEHICLE WHEEL HUB.—G. A. Krohn, Gold Gulch, Cal. No. 601,853. Dated April 5, 1898. This invention relates to improvements in hubs for vehicles. The object of the invention is to provide such a construction of wheel hub as will enable the maker to put the wheel together and lock the spokes firmly in place without the use of separate screws or bolts to secure the parts of the hub together. This is effected by making an exterior hub or sleeve with an interior box or journal to receive the spindle upon which the wheel turns, a fixed circular flange projecting outwardly from the hub having the inner face in a plane transverse to the axis and the opposite end of the hub or sleeve cylindrical and partially screwed thereon. Radial plates are fixed upon the fixed flange between which plates the tapered inner ends of the spokes are fitted, a second disk is made to move upon the cylindrical portion of the hub and it has an annular flange projecting from its inner plane face so that the flange will enter corresponding grooves or channels made in the inner ends of the spokes and when this plate has been screwed up tight against the spokes they will be locked firmly between the two disks and also held by the annular flange. A nut is screwed upon the outer end of the sleeve or hub so as to compress the disk firmly upon the spokes and lock the whole together.

SAFETY ASH RECEIVER.—S. M. Smith, San Francisco, Cal. No. 601,845. Dated April 5, 1898. This invention relates to improvements in that class of containers designed for ashes known as "ash receivers," and the object is to so construct the receiver as to prevent the floor or other part of the building or adjacent inflammable objects being ignited or damaged by heat conducted through the metal of the receiver when hot ashes or live coals are placed therein. It consists essentially in the employment of an asbestos jacket between the exterior and the interior sides and between the double bottoms of the receptacle. The receiver is made with offsets in its sides, the bottom being arched upwardly and having its periphery expanded into one of said offsets or grooves. A second bottom of smaller diameter has its edge turned upward parallel with the sides of the receiver and the periphery of the upper edge is expanded into the other offset or channel after the filling of non-heat-conducting material has been placed in the space intermediate between the two bottoms and the sides of the two parts. The construction is simple and easily made and is very valuable for its purpose.

PROGRAM CLOCK.—E. F. Burrill, Oakland, Cal. No. 601,850. Dated April 5, 1898. This invention relates to that class of devices in which electric gongs, annunciators, relays, or other electrical or mechanically operated devices for signalling and other purposes are set in operation at prescribed times through the agency of a clock. The times at which these devices are set in operation refer usually to and indicate some kind of a program from which this class of devices has received the general title of "program-clocks." It consists essentially of the dial having an annular flange or circle, a node consisting of a substantially U-shaped plate having resilient side arms or members adapted to embrace said flange or circle and to be adjusted to different points thereon, a finger projecting transversely and directly from the lower extremity of one of the legs of the nodes and being of a substantially right angled triangular shape in cross section. An electrically operated clock hand having an under bent lever on its outer end adapted to extend in the direction of the movement of the hand and to travel up the inclination of the finger and an insulating strip on the under side of the lever covering a major portion and exposing the point so that when the lever travels up the slope it makes contact with the ridge or edge of the finger and thus actuates the desired mechanism.

The Dredging Engineers' Report.

In Sacramento, Cal., on the 9th inst., at a meeting of the Board of Public Works, the following report on dredgers was submitted:

Department Public Works, Sacramento, Cal.—GENTLEMEN: Complying with your inquiry of Jan. 20th, '98, concerning dredging machines, asking at what points on the Sacramento and San Joaquin rivers, if any, a hydraulic dredger could be used to advantage; what make of dredger we would recommend as the best; its cost, capacity and cost to operate; what disposition we would recommend to make of the material taken out of the rivers, and whether or not the work that could be done with a dredger would justify the expenditure for purchase of such a machine, we have the honor to submit the following report:

By a hydraulic dredger we mean a machine which generally by suction, aided by other mechanical devices, removes material from the bed of a river, and by the aid of water conveys through pipes such material ashore or deposits it in other places in the bed of the stream. All machines of this character are protected by various patents, and their unauthorized use might lead to vexatious litigation. Some hydraulic dredgers use buckets or conveyors for hoisting the excavated material into a pipe or hopper, and then by the application of pumps force the spoil ashore.

For economical purposes hydraulic dredgers use centrifugal pumps either for lifting the material or for forcing it ashore, generally for both purposes. Where the material to be removed has to be deposited on a bank or levee exceeding about 15 feet in height above the surface of the water, the expense of handling is greatly increased, and for this reason for the purposes of levee building they are not considered as economical machines.

For purposes of rapidly cutting a channel through or over a bar, provided the material can be redeposited in the river or on a low bank, even though the place of deposit be several thousand feet distant, a hydraulic dredger is eminently the economical one to use.

On material such as is found in the San Joaquin river, where cut-offs have heretofore been made, such machines have not been tried, though the opportunity has been given and machines were available. The work was open to competition, but the hydraulic machines failed to get the award, either because their owners failed to bid or because the owners of other types of machines underbid them.

For ordinary channel making, where the excavated material can be placed on the bank or laid up in the form of a levee at a convenient distance alongside the cut, the clamshell and bucket dredgers seem to have an advantage over the hydraulic machines. Moreover, when any hydraulic machine places the spoil ashore it is done by the aid of water, and the volume of water required to convey the solid matter ashore varies from three to ten times that of the solid matter.

In a country where crops are under cultivation this type of apparatus cannot well be used. Bars only interfere with navigation at and during low-water periods; it is at such times that they can be most easily and economically cut through, but at such periods the river banks themselves are far above the water surface, and if, as has been stated, the banks are 15 feet or more in height, the cost of pumping the material to this height again becomes excessive and ceases to be economical.

For purposes of bar removal in streams like the San Joaquin and Sacramento rivers it is doubtful if the United States Government would permit the material excavated from any one bar to be redeposited in the bed of the stream, for the reason that much of it would, through the action of currents, fail to remain where deposited, and would find lodgment on other shoals, to the detriment of navigation.

The largest hydraulic dredgers yet built are in use on the Mississippi river. One, known as the Alpha, was built in 1894. The tests, which were published throughout the country, were phenomenal; generally such tests rarely exceeded one minute in duration. Such results have not been maintained in actual working operations. The Mississippi River Commission, however, has reported the work done by this machine during eighty-four days in 1895, based on five separate tests. These tests showed a capacity of 531 cubic yards of sand per hour discharged through 1002.5 feet of floating pipe. In these eighty-four days a record of the performances of the machine was kept, from which the following extract is taken:

| | Per cent of total time. |
|---------------------------------------|-------------------------|
| Towing from bar to bar..... | 4.5 |
| Repairing plant..... | 5 |
| Repairing machinery..... | 2.4 |
| Placing dredge and dropping back..... | 5.9 |
| Operating (actually dredging)..... | 70.6 |
| Sundays and holidays not working..... | 14.7 |
| Boats passing..... | 1.3 |

Total.....100.0

The cost of the machines, monthly cost of operation, and the total number of cubic yards removed are not stated; it is therefore impracticable to deduce from the above record the average cost per cubic yard of the sand removed; but the *Engineering News* of February 17, 1898, states that the cost varied from nine-tenths of 1 cent to 15 cents per cubic yard. The average deduced cost is 1.55 cents per yard.

Another hydraulic dredger, called the Beta, has since been built, but we have no authentic reports of her performances. During the past year, however, two additional hydraulic dredges have been built for use on the Mississippi river. They are supposed to possess all the latest improvements, were built at South Milwaukee, and cost \$102,400 each. Each machine is believed to have a capacity of 1,000 cubic yards per hour, requires a crew of from forty to forty-five men when running double shifts, and the monthly running expenses are estimated at a little over \$5,000 each. Should these machines come up to expectations, it can be calculated on the above basis that the monthly output would be about 500,000 cubic yards, and the cost would be about 1 cent per cubic yard.

There are two good hydraulic dredgers in California, whose performances are well known. They have from 250 to 275-horse power each; either can be duplicated at an estimated cost of \$60,000. They have been working at Oakland harbor and elsewhere. Their working expenses, running one shift per day, are about \$2,200 each per month. They have worked in depths of twenty feet of water, have pumped material ashore through 6,000 feet of pipe and deposited the same at heights varying from three to fifteen feet above water level. Their output per hour and cost of delivery in material of different character has been as follows:

Soft, plastic mud—300 cubic yards per hour; cost, 6 cents per cubic yard. Mixed sandy clay and mud—100 cubic yards per hour; cost, 10 cents per cubic yard. Soft hard pan—90 cubic yards per hour; cost, 15 cents per cubic yard. Hard pan—40 cubic yards per hour; cost, 25 cents per cubic yard.

The Government dredge which has for years been working in the rivers of this State is a combination of an endless chain bucket dredge, with a hydraulic apparatus for carrying material ashore. Her original cost was \$50,000; the average cost of all work done by this machine has been 8.4 cents per cubic yard.

It is known that the most modern types of clamshell and bucket dredgers now in use in the rivers of this State generally used for reclamation, levee building and channel rectification, cost not to exceed \$24,000. Their average output exceeds 100 cubic yards per hour; their monthly running expenses are less than \$1000, from which we deduce that the average cost for handling material and placing it ashore does not exceed 4 cents per cubic yard. In fact, contracts can be made to do work of this character at from 5 to 6 cents per cubic yard.

A dredging machine owned by the

State would hardly be in use during one-half the time in a year; the cost of maintenance is constant, repairs frequent and expensive; deterioration, whether in use or not, is rapid, and the work which may be required in the rivers of this State is of such a varied character that no one type of machine can do it all economically. Machines suitable in character can nearly always be obtained for hire, or for doing a certain piece of work by contract, at a reasonable price over actual cost.

We do not know of any place on the Sacramento or San Joaquin rivers where, with the improvements in contemplation by the State, it is advantageous to either purchase or build a hydraulic or any other type of dredging machine.

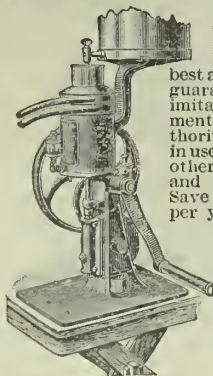
For reasons above stated, and looked at simply as a business proposition, with the amount of money appropriated by the State, and available for the purposes mentioned in the act, we do not feel warranted in recommending the purchase and maintenance of any dredging plant.

M. A. NURSE, Chief Engineer.
W. H. HEUER, Con. Engineer.

Don't spend so much money on lamp-chimneys—get Macbeth's—get the chimney made for your lamp.
The Index tells.

Write Macbeth Pittsburgh Pa

"ALPHA-DE LAVAL" CREAM SEPARATORS.



De Laval Alpha "Baby" Cream Separators were first and have ever been kept best and cheapest. They are guaranteed superior to all imitations and infringements. Endorsed by all authorities. More than 125,000 in use. Sales ten to one of all others combined. All styles and sizes—\$50. to \$225.—Save \$5. to \$10. per cow per year over any setting system, and \$3. to \$5. per cow per year over any imitating separator. New and improved machines for 1898. Send for new Catalogue containing a fund of up-to-date dairy information.

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R. M. Bussard's Creamery, Poynette, Wis., scoring 98½ points and taking

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at the State Convention at Manitowoc, Feb. 9-11, 1898.

Remember the United States leads in the greatest dairy State of the East,

VERMONT

E. E. Symes' Creamery, Ryegate, taking

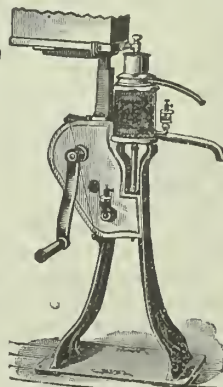
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Don't guess what your cows are doing, but KNOW. Don't think your cows are all right when you can KNOW. Don't use an inaccurate Babcock Test. Don't let your creamery man skin you; keep a check on him. Send to us for a first-class ten-dollar

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THE HOME CIRCLE.

Baby's Prayer.

In looking backward now they come to me—
The scene, the shadows, and the summer
air;

His little head low bowed upon my knee,
As sweetly offered he his baby prayer;
"Bless papa, an' my ma, an' allow o need,
An' make of me a dood boy, I am payin'.
An' if at fir's, dear Dod, 'ou don't sutseed,
Den twy, twy adain!"

I smiled—but on the smile there also went
To God another simple prayer from me,
Repeated now, with teardrops sadly blent,
For the dear boy wherever he may be:
"If he should stumble in the untrod way,
Still plead with thy dearspirit from aloft:
Be patient should his feet be led astray,
Not once, not once, but oft!"

—Will T. Hale.

Farmer Martin's Birthday Surprise.

"Good mornin', Mis' Mowers, I've brought you over a couple o' Hubbards. Squashes are going fast this winter and I thought I'd bring you these 'fore they got teched."

"Thank you Mr. Martin. It's real neighborly o' you. Won't you step in? I'd like to show you my cally plants. They've more buds 'n common for Easter."

"No, Mis' Mowers, I haint no int'rest in Easter."

"Why Mr. Martin, you haint lost faith in relig'n, I hope?"

"Oh, no, my relig'n's all right. What I meant was, I haint got no more hope here, Easter, or any other time. All days are alike to me, an' hard 'nough, too, they are."

"Poor man," thought Mrs. Mowers, as she sat down to her sewing in her tidy room. "I s'pose he does have a pretty tough time with them three children laz'n round. He looks ten years older'n I do, an' he's that much younger, I'm sure. Sometimes it seems 's if thet's all a man gets when he slaves for his own."

She sewed a while with only the crackling of the wood in her well-polished stove to break the silence of the cheerful place. A rag carpet covered the floor, there were two comfortable cane-seated rockers, the windows were embowered by bright-blossomed geraniums, delicate oxalis, and the glossy green leaves of her flourishing Easter lilies.

"I'd rather be a childless old widder such as I be," mused Mrs. Mowers, than havin' a set o' children like them Martins. Yet I remember when Mis' Martin died, how we tried to comfort him by sayin' 'what a blessin' they'd be when growed up. With the tears in his eyes he said he knew it, 'n he's jes' been father 'n mother to 'em ever since. He's actilly cooked for 'em 'n washed for 'em, 'n what have they turned out? The laziest of the lazy. Thet Kate must be nigh seventeen now, 'n she works about as much as a young suckin' calf. Spends her time reading story papers 's near's I can make out. 'N that great lubberly Jerry probably don't arn his salt. Betty's in school, but comin' up like the others. It's a dretful shame."

Thinking over her neighbor's grievance, Mrs. Mowers sewed faster than ever. The forenoon passed, and the clock struck twelve.

"Laws a me, thinkin' o' them young ones, if I ain't a-forgettin' to bile a piece o' that squash."

She hastened to prepare it, and just as she dropped the mottled green crescent into the pot where her corned beef was simmering, a bright ray of intelligence flashed across her wrinkled face.

"I believe I ken dew it. There ought not to be a lazy bone in 'em with their mother afore 'em 'n sech a father. It may be they jest need wakin' up an' I'm agoin' to try to wake 'em."

About four o'clock that afternoon some one rapped at Mr. Martin's door. Kate dropped her story paper on the pile beside her, and hastened to open it. Her face was pretty and bright, but her untidy hair, the rents in her gown, and her trodden-down slippers, did not speak much in her favor.

"Why, Mrs. Mowers! Come right in!"

"Thank 'ee. Good arternoon, Jerry. Poppin' corn, ain't ye?"

"Have some?" the tall boy asked, as he awkwardly held towards her the two quart tin dish which was heaped with the foam-white and fragrant corn.

"No, thank 'ee. It don't set well on me as it used to when I was younger. Betty haint got home from school, has she? Wal, I come to ask if you three children couldn't call over to-morrow and stay to dinner with me? I get sort o' lonsome alone there, 'n thought may be you'd come, seein' your father's off all day at his choppin'."

"Why, yes, we'd like," said Kate, "it is rather lonely here, too, with not much to do but sit and read."

Mrs. Mowers glanced at the undarned socks lying in a corner, the dust on doors and mantel, the sooty window panes and Kate's torn gown, and thought; but she said nothing.

She went away, and Jerry, as soon as the door had closed, remarked:

"Good. Now I'll have an excuse for not sawing that pile of wood father spoke of my doing."

When Betty came in and learned of the invitation she, too, looked pleased.

"I needn't go to school in the afternoon, and I'm glad, there's such a hard geography lesson."

The three young folks presented themselves at Mrs. Mowers' quite early in the afternoon. They wore their best clothes and looked very well. The old lady welcomed them cordially.

"I've got my dinner well under way so's to sit right down and visit with you. Wait till I fetch my knittin'."

"You didn't fetch no sewin', did you?" she said to Kate; "thet's too bad, it's so much more sociable."

Kate, in the other rocker, was already beaming with contentment, both hands idle in her lap.

"I'll bring you a bit of the prettiest sort of work. A white aporn with the cutest agein' to go on it. Mis' Rice, the milliner, is givin' 'em out at twenty cents apiece, and I thought I'd take a few."

Kate's pout changed to a smile when the dainty work was seen, together with a thimble which just fitted her, thread and needles, all neatly disposed in a case. She thought if she had work like that to do at home she would not mind doing it. It was odd that Mrs. Mowers should have a thimble to fit her small finger.

"Here's something for you, Betty."

It was a partially crocheted crimson silk mitten.

"Mis' Rice wanted a few pairs o' them made and I promised to do a couple, money arnt that way comes in handy."

"Jerry'll feel dretful foolish settin' still while we're busy as bees. Don't you want to shell my bushel of corn?"

I'll put an old sheet right there in the corner, an' 'twon't make a speck o' litter. There, now we're all fixed comfortable, 'n ain't it nice? I like to hear the corn rattlin', it seems sort of musical."

Jerry did not think it musical, and inwardly rebelled on being made service of in that way. But he thought of the nice dinner that was coming and schooled himself to submit.

Kate was surprised at the amount of work she had done on the apron when Mrs. Mowers announced dinner. Betty had finished the mitten and begun on another. Mrs. Mowers had entertained them with stories of her girlhood, and the time had slipped away unnoticed.

"Kate, I wish we could have a boiled dinner like this some time, and such a baked Indian pudding," said Jerry, as he passed his plate a second time for the latter.

"Why, don't you have 'em?" said Mrs. Mowers. "I's afraid you might have 'em often, and not relish my dinner."

"Father sometimes cooks a piece of corned beef and cabbage on Sunday," said Jerry, "but I guess Kate don't know how to make a pudding."

Kate blushed, and Mrs. Mowers hastened to say that she would give her recipes for all sorts of puddings if she wanted them. But perhaps she preferred to make pies?

"We never have any pie," said Betty, and Kate blushed again.

As they were leaving the table an old

dog limped out from behind the stove and whined for his dinner.

"Where did he come from? What's the matter with him?" asked Jerry.

"He limped up to the doorstep one day last week, and he put up his paw jest like anybody, showing me 't was hurt. I bound it up but I've been most unfortunate about it. Poor fellar! I thought he'd run off soon's ever the door was opened, but he 'pears to want to lay round."

She stooped and patted him.

"Jest see how beseechin' he looks at me 'n' how he moves round me. For all the world it makes me think o' some human bein's. The more you hurt 'em, the more they seem to thank you."

"Rather foolish folks!" laughed Jerry.

"Wal, I'd'n know. There's one man I think on in particular. He got an awful hurt some years ago. 'Twas his heart. Seems if he'd never get over it. Couldn't be bound up like thet dog's paw; 'n in'ard hurts, anyhow, is the hardest to recover from. But there was three of his own folks that depended on him 'n' so he tried to spruce up 'n' make life easy for 'em's he could. The way that man slaved! But the more he done the more ongreatful them three seemed to grow. Jest like my hittin' the poor dog's paw 'n' keeping the sore from healin', so the hurts that man gets from the neglect of them he's loved 'n' slaved for, seems to make his heart ache wuss 'n' wusser, 'n' I shouldn't wonder if some day he suddintly died on 't. Ef them three could only be brought to see 't, 'n' do a little for him before it's too late 't would be something like."

"But, law' this is kinder mournful talk for you young folks. Let's go back to work 'n' I'll tell you some more stories."

Mrs. Mowers recalled the funniest incidents she could, and soon had them all laughing gayly. She noticed that Kate sewed even more diligently, and Betty hardly took her eyes from her work, while Jerry offered to wind yarn, replenish the fire, and do various other things.

"Wal, now if you haint finished that apron every stitch!" she said to Kate. "I'm awful glad, for I's 'fraid I shouldn't get 'em done when I promised 'em to Mis' Rice. Course I shall pay you for it, 'n' you for your mittens, Betty 'n' you, Jerry, the ten cents I allers give old Silas White for shelling a bushel of corn. Children like to arn a little spare change as I remember o' myself, though it's many years ago. Now I hope you'll all spend another day with the old woman, 'n' lighten her up 's you have done to-day."

Kate and Jerry were silent on their way home, though Betty talked freely of the good time they had had and the generosity of Mrs. Mowers.

As they were about going in, Jerry

said, "Kate, do you suppose she did mean father when she spoke of that man?"

Kate bowed her head in assent.

"I think she was real mean, then."

"I don't. I think we deserve it."

Mr. Martin found a better supper than usual when he came home that evening. He seemed very tired, and, after it, he drew his straight chair up near the wall, tipped it back, and balanced thus, fell asleep. Kate watched him, for the first time not caring for her story papers.

"I wish father had a good, comfortable rocking chair to doze in," she thought.

She looked about the room.

"I wish it looked here as it does at Mrs. Mowers," and she drew a deep sigh.

Jerry and Betty were playing checkers.

"What ails you to-night? You don't play worth a cent!" complained Betty.

Jerry pushed the board away.

"I'm sick of it," he said, and he went over and sat by Kate.

"We ought to do something," he said, speaking her own thought.

Mr. Martin woke up. He put his chair into a level position, stretched himself, and then said he must go out and fodder the cattle and then he should go to bed.

"I'll feed them," said Jerry, and sprang out.

"Why, whatever—" began Mr. Martin, but he did not finish the sentence. He took off his boots, Kate noticed that he had wound strips of cloth around his feet to cover the holes in his stockings. She felt hot.

That evening Kate and Jerry made a plan. The next morning she said to her father.

"Why don't you go up to Vermont and visit uncle Harrison, father? He's been wanting you for ever so long."

"I couldn't spare the time. And what would you children do?"

"We'd get along all right," said Jerry.

Mr. Martin shook his head. He went to his work.

Kate put the house in better order that day, and when she had prepared for a nicer supper than usual for her father, she went to call on Mrs. Mowers.

"Do you think Betty and I could get work of Mrs. Rice?" she asked. "We think we have time to do some!"

"I'll be awful glad if you will take mine off my hands," replied the wily old lady. "Sence I got it, I find I reely haint time for doing it."

So Kate took the work home, and when it was finished she was able to engage more.

Jerry had not been idle. He had found a chance to work three or four hours a day for a neighboring farmer, and as Mr. Martin was away from morning till night chopping in the

BLOOD POISONING.

A Nurse's Experience.

There are thousands of people suffering from blood poisoning who have almost begged themselves in buying medicines from which they have obtained no help. There are thousands of others who first or last have tried Dr. Ayer's Sarsaparilla and found perfect healing. One of these others, Mrs. A. F. Taylor, of Englevalle, N. Dak., relates the following experience:

"About two years ago, I nursed a lady who was suffering (and finally died) from blood poisoning. I must have contracted the disease from her; for shortly after her death, I had four large sores or ulcers, break out on my person. I doctored for a long time, both by external application and with various blood medicines; but, in spite of all that I could do, the sores would not heal. They were obstinate, very painful, annoying, and only getting worse all the time. At last, I purchased six bottles of Dr. Ayer's Sarsaparilla, thinking I would give it a thorough trial. Before the first bottle was taken, I noticed a decided improvement in my general health; my appetite was quickened, and I felt better and stronger than I had for some time. While using the second bottle, I noticed that the sores had begun to look healthier

and to heal. Before the six bottles had been taken, the ulcers were healed, the skin sound and natural, and my health better than it had been for years. I have been well ever since. I had rather have one bottle of Dr. Ayer's Sarsaparilla than three of any other kind."

This is but one example of the remedial value of Dr. Ayer's Sarsaparilla in all forms of blood disease. There is no other blood medicine that cures so promptly, so surely and so thoroughly. After nearly half a century of test and trial it is the standard medicine of the world for all diseases of the blood. Sores, ulcers, boils, tetter, rheumatism, scrofula and every other blood disease is curable by Dr. Ayer's Sarsaparilla. The success of this remedy has caused many imitations to be put on the market. Imitation remedies work imitation cures. The universal testimony is that "one bottle of Dr. Ayer's Sarsaparilla is worth three of any other kind." If you are interested in knowing more about this remedy, get Dr. Ayer's Curebook, a story of cures told by the cured. It is sent free on request by the J. C. Ayer Co., Lowell, Mass. Write for it.

woods, this remained a secret to him as did the employment of the girls.

A week after Kate proposed the visit, Mr. Martin said:

"I've been thinking of what you children said about my going up to your uncle Harrison's. I believe 't would do me good, an' ef you can spare me, I think I'll go right away?"

"Oh, do, do go, father," cried all three.

"Why whatever—" began Mr. Martin. Then with an anxious look he asked, "Why are you so eager to get rid o' me?"

"We think you need a rest," answered Kate.

Her father turned quickly and went out, and it seemed to Kate she had never seen that look before.

He went the next day. Kate and Betty kissed him good by. They could not recall when they had kissed him before. His eyes had a mist on them, but he rubbed his hand across them and said briskly to Jerry:

"Don't forget to look well after the cattle. The rest of the things can slide still I come back."

Jerry answered "all right" but gave a knowing look to his sister. They went into the house and began operations.

Kate wrote every other day to her father telling him that they were getting along nicely and there was no hurry about his coming home. Jerry was taking good care of the cattle. In consequence of this, Mr. Martin prolonged his visit several weeks. It was the first time in thirteen years that he had allowed himself a vacation, and he was astonished at the enjoyment he found in it.

One afternoon, a short time before Easter, Mrs. Mowers thought she would call on Kate. She had scarcely seen her since her father went away, but she had heard from Mrs. Rice that the girls had been doing considerable work.

Kate met her wearing a pretty new print gown, her hair nicely arranged, and holding in her hand the apron on which she had been sewing.

"Oh, come right in, Mrs. Mowers!"

The old lady looked in astonished at the change that had been wrought in the place. The ceiling had been white-washed, the paint cleaned, the floor painted a fine yellow. There was a braided rug before the fire and a large rocking chair, cushioned back and seat.

"Why, Kate," Mrs. Mowers exclaimed.

"We thought we'd give father a surprise," laughed Kate, "Jerry did the whitewashing and the painting and Betty and I the other things. See here."

She threw open the door of her father's bedroom which showed fresh white curtains, another braided rug and a pretty pieced coverlet.

"Why, Kate!" repeated the old lady, "you make me think o' Easter callies. You've blossomed right out into a beautiful housekeeper all at once!"

Kate blushed.

"I wanted to please father," she said in a voice that shook a little. "His birthday comes after Easter, and then he'll be home."

"And here is some of my cooking," she added as she gave Mrs. Mowers a glimpse of the pantry shelves.

There were apple pies, and squash pies with a fine yellow-brown glaze. A large cake was yet exhaling a rich, fruity fragrance. A pot of baked beans was flanked by a symmetrical loaf of brown bread.

"Wal, you've done the thing that'll please him more'n anything else in the world Kate! You'll be putting hope right into his heart soon's he sets his eye on these changes. I'm going to fetch one of my callies right over to you, 'n' you see ef when he sees it he don't say somethin'!"

She hastened out, as eager in her manner as if she had been only seventeen like Kate, and leaving Kate wondering.

"There!" she said when she had returned bearing the pot with its three expanded buds just ready to burst, "I've brought you the best o' the lot, 'n' I want you to tell me just what your

father says when he looks at that calli."

"I certainly will," said Kate, beaming with delight over the lovely plant which added the finishing touch to her neat room.

She thought it a happy chance that the buds opened the day before her father's birthday. The place was full of the sweet fragrance of the large, perfect lilies.

When the well known figure was seen coming the young folks could hardly contain their feelings. They opened the door and drew their father in. Their laughter and greeting quite drowned his voice for a few moments. He looked around him, his expression changed from wonder to gratified affection.

Then his eyes rested on the calli.

"That's what smells so sweet here, that ere lily? Wal, children, thet can tell you better'n I can, the new hope you've started in my heart, makin' me feel life's worth livin'!"

Gems.

Many, indeed, think of being happy with God in heaven; but the being happy with God on earth never enters their thoughts.—John Wesley.

We must lie fallow before we can produce greatly, and we must enrich ourselves inwardly before we can spend generously in creative work.—H. W. Mabie.

All that is best in us struggles for expression because it does not belong to us alone. No gift, no talent or faculty is merely private property.—Charles G. Ames.

It takes expert skill and faithful pains to keep rosebushes and good motives free from ruinous vermin, but the flowers and character that reward success do it gloriously.

Never yet were the feelings and instincts of our nature violated with impunity. Never yet was the voice of conscience silenced without retribution.—Mrs. Jameson.

Life is a train of moods like a string of beads, and, as we pass through them, they prove to be many-colored lenses which paint the world their own hue, and each shows only what lies in its focus.—Emerson.

Thank God every morning that you have something to do that day, which must be done whether you like it or not. Being forced to work and to do your best will breed in you a hundred virtues which the idle never know.—Charles Kingsley.

If I do what I may in earnest, I need not mourn if I work no great work on this earth. To help the growth of a thought that struggles toward the light; to brush with gentle hand the earth-stain from the white of one snow-drop—such is my ambition.—George McDonald.

Eager clutching at the delights of natural life, and making it one's chief aim, is the sure way to lose all its sweetness, and to miss the higher life; while the subordination, and, if needful, the sacrifice of "life in this world," leads straight to the possession of "life eternal."—Alexander McLaren, D. D.

The Laziest People on Earth.

The laziest and dirtiest people in the world have recently been discovered in the Caucasus. They live in an inaccessible mountain range between the Black sea and the Caspian sea, and as they were 2500 years ago, so they are today. Seen from without, there is a certain picturesqueness about a Svancian village, although it merely consists of miserable stone hovels without any attempt at form or adornment. Within, the houses are inconceivably filthy. They are filled with rags, vermin and dirt of every description. They possess no fireplace or chimney. All the cooking, in fact is done over a hole scooped out in the middle of the floor. In these houses, men and women and children are huddled together; during the long winter months they are shut in for days at a time, the cattle often sharing their quarters. Every aper-

ture has to be closed on account of the cold. This long imprisonment is, perhaps, the cause of the degradation of the people. Horrible diseases result from it, which are aggravated by an abnormal consumption of arrack, the strong distilled drink of the Asiatics. Besides this, it is an invariable rule to make four days a week holidays, with saints' days as extras. Since they have adopted the holidays of every other country with which they have been in contact, it is not surprising that the men find little time for work. Farming, bee culture and cattle breeding are the only industries of these people, while throughout their territory there is not a single manufactured article.

Sleep-Inducing Methods.

An article in the *Lancet* gives some hints on the inducing of sleep which will be of interest to all victims of insomnia. So vital is the necessity for sleep that any method by which it may be secured is worthy of attention. The means employed is to produce weariness by muscular exercise after retiring. "Lying on his back, the patient first reaches for the foot and head-board at the same time. He then raises his head half an inch; at the same time he breathes slowly and deeply about eight inspirations to the minute, which are counted. After about twenty inspirations, the head, which begins to feel heavy, is dropped. The right foot is then raised (the reaching for the boards and counting being continued), and similarly dropped when fatigued. The left foot goes through the same process. The muscles which are used in reaching for the head and foot boards are then relieved, and the body is elevated so that it rests on the head and heels. He then turns on the right side and reaches for the head and foot boards again, and raises first the head and then the foot, as before. The same process is gone through on the other side. Thus eight positions have been assumed, and a large number of muscles used. If sleep has not been induced, the same cycle is gone over again."

Fashion Notes.

Silk shirt waists are completed with a stock and long tie of the same silk.

A novelty in long watch chains is made of black sewing silk, with either gold, coral, turquoise or some other variety of fancy bead at short intervals the entire length.

Neckties of white chiffon trimmed across the ends with gathered narrow white satin ribbon are the latest fad.

Purple in one or other of its many tints and tones, including plum, violet, orchid, heliotrope, petunia, iris, lilac and wistaria, is everywhere in evidence in the exhibit of spring dress fabrics, ribbons and millinery.

Never were finer woven or more daintily fascinating designs and lovely color blendings produced than are shown in the organdies brought to view for the summer of '98.

The riding habits are excessively simple, skirt narrow and only long enough to cover the feet, with a tight-fitting, single-breasted coat of three-quarters length. These are made up in dark cloth and light-weight coverts, devoid of ornamentation, their beauty depending entirely on their cut and fit.

The big dotted veil is a thing of the past. It is not even carried in stock at really swell places. The complexion veil has ousted it. This is very properly named, but it might be even better to call it the complexion beautifier. It is astonishing how a piece of plain

black net of crisscross or diamond design can enhance a plain woman's looks.

DOMESTIC ECONOMY.

Domestic Hints.

BOILED ICING.—Beat whites of three eggs stiff and set away in cool place. Dissolve two cups granulated sugar in half cup water, over hot water, while eggs are being beaten. Then boil it without stirring until it will spin a thread from the tip of a wooden skewer. It will take from three to five minutes. Pour it slowly over the whites and stir until it is thick and cool. Flavor to taste. Do not boil the sugar until everything else is ready—cake, utensils and everything.

BOILED ICING, No. 2.—Two cups sugar, half a cup water, whites of two eggs. Make same as No. 1. If the dry sugar and cold water are put directly over the fire, it takes longer for the sugar to thread, so there is an advantage in having it dissolve slowly before boiling.

STEWED PRUNES.—The nicest prunes do not need sugar, and it is much better for us to eat them without, as they contain a large amount of fruit sugar. Wash them in tepid water, then put them on in cold water to more than cover. Use a granite or porcelain kettle and cover tightly with a plate. Let them cook very, very slowly, with hardly a bubble, for several hours, or until the skins are perfectly soft.

PRUNE PUDDING.—One cup water, one cup prune juice, three tablespoonfuls cornstarch, one-half saltspoon salt, sugar to taste, three eggs (whites), one-half cup thick whipped cream, one pint milk (for sauce). Boil the water and prune juice; wet the cornstarch in a little cold water and stir it into the boiling syrup. Cook ten minutes, add the salt and sugar to taste, the amount depending upon the sweetness of the prunes. Have a cupful of the prune pulp, freed from stones and cut in small pieces. Stir this into the starch, then add the whites, beaten till foamy, and last the cream whip. Turn into a mold and set away to cool. Make a boiled custard with the yolks of the eggs, three tablespoonfuls sugar, half saltspoonful salt and the milk. Flavor with lemon and serve very cold.

PRUNE CREAM.—One pint prune juice, one-quarter cup sugar, one tablespoonful granulated gelatine, one-quarter cup cold water, one-quarter cup boiling water, one pint cream. Measure the gelatine slightly more than level, or use one-fourth box of shredded, soak it in the cold water, then dissolve in the boiling water and strain it into the prune syrup. Add more or less sugar as the prunes require, but avoid having them too sweet. Some prunes are improved by the addition of lemon juice. Cool, and when it begins to thicken, beat in one cup of prunes stoned and cut small and the whipped cream. Turn it into a plain mold or line the mold first with lady fingers. Use for this a thin cream whipped in a churn.

Surplus syrup from fruit canning keeps perfectly bottled or in jars, and is a fine addition to the mince meat, also delicious for pudding sauces; used in proportion of one cup syrup to one tablespoonful butter and one light tablespoonful flour blended.

A little milk added to the dishwater is better to use than soap in cleansing china.

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Granite State Evaporator Co. Sweetser, Ind., June 14, 1897.

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Science's Newest Wonder.

One of the most interesting features of the Paris exhibition of 1900 should be Herr Szczepanik's apparatus, by means of which actual scenes are made visible to people hundreds of miles away from the spot. The objects are to be reproduced in all their varieties of color, light and shade, and every phase of movement is to be represented. Such is the promise of the inventor, and the facts that he has received nearly a million and a quarter of dollars for the exhibition and French rights of his patent would seem to prove this poor Galician schoolmaster has really solved the problem on which many people have been working.

Herr Szczepanik calls his apparatus the "telectroscope," because it renders objects visible in their natural colors at a distance by means of electricity. The manner in which this is effected is somewhat difficult of clear explanation. From the inventor's representative in London the following particulars have been gathered as to the method of transmission:

Roughly speaking, the picture is broken up into a number of points. Each point is reflected in mirrors and the reflected ray of light is converted into an electric current, which can be transmitted at any distance. At the receiving end the current is again transformed into the corresponding ray of light. This ray of light is reflected in mirrors and the reflection thrown upon a screen. Now, it follows that if all the points of a picture are taken in very rapid succession, the resultant reflection on the screen will be the entire picture.

In greater detail, it seems that there are two mirrors at the receiving end and two more at the transmitting end. Each mirror has its surface coated with some opaque substance. Across this opaque covering a straight lined scratch is made with a needle or knife, so that only a narrow linear strip of reflecting surface is exposed. The purpose of this is that only a single line of the object under observation may be exposed to the reflective influence of the mirror. The mirror (the first one in which the object is reflected) is fixed on a pivot, by means of which (with the aid of an electro-magnet) it is continually oscillating, so that the lines of the object under observation are continually changing.

Each of these single line pictures is broken up into points by means of the second oscillating mirror, which is placed at right angles to the first, so that its reflecting line is at right angles to the reflecting line of the first. As two lines intersect each other in a point, it follows that only a single point of the reflecting line of the first mirror will appear in the second mirror, and therefore only the reflected ray which corresponds to this point will be reflected in the second mirror. The two mirrors oscillate synchronously.

This ray of light, which corresponds to a certain point in the picture, is converted into an electric current by the employment of an electric battery with a selenium cell. The property of a selenium cell is that its electrical resistance varies with the color of the light to which it is exposed; it is energized in different degrees by different rays. A blue ray, say, will have a very powerful effect upon it, while a red ray will set up a very weak current.

This electric battery is connected by wires with an electro-magnet at the receiving end, where the electric currents are to be reconverted into rays of light. The electro-magnet will accomplish this by moving in sympathy with the electric current sent out from the transmitting apparatus, and its movements will necessarily correspond to the nature of the ray reflected. A blue ray, for instance, would move it a considerable distance, while a red ray would only slightly deflect it. This magnet is made to move a prism, which is placed in front of a strong white light—either the light of the sun or an electric light. The action of the prism will break the white light up into seven prismatic colors. These colors are spread out in a spectrum.

The prism being moved by the electro-magnet, it will necessarily revolve just so far as to bring the required color into view. This color will now be reflected in one of the two mirrors at the receiving end. And just as the action of the other two mirrors was analytic, so the action of these two is. Each point of the picture is reflected on a screen, and as the points follow one another in very rapid succession indeed, the eye of the observer will take in the impression of the entire picture as if its points were all presented to it simultaneously. The picture can be made to last as long as may be desired by constantly reproducing the effect, and at such a speed that the observer is unconscious of any break in the process. It is no more difficult to reproduce a moving picture than a still one, for the inventor explains that "it is the actual picture which is reproduced, and not a mere record, as in the case of the cinematograph."

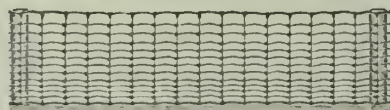
Another point claimed is that there is practically no limit of the distance within which the apparatus can be used. With the possibility of a telephone wire 1000 miles long, such as that between Chicago and New York, the inventor thinks that the telectroscope wires might be of any length. Such an instrument, of course, opens up a wide field of possibilities. Scenes of foreign travel, battle fields during action and the eclipse of the sun are only a few of the things we might have seen recently, while sitting comfortably at home, had Herr Szczepanik had his machine well established a little earlier. As it is, the question arises, has not this Galician genius done away with the necessity of visitors actually going to Paris in 1900?



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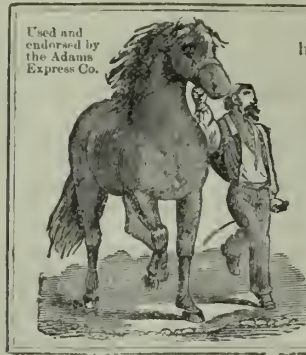
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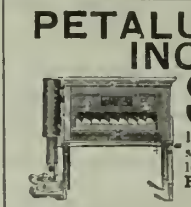
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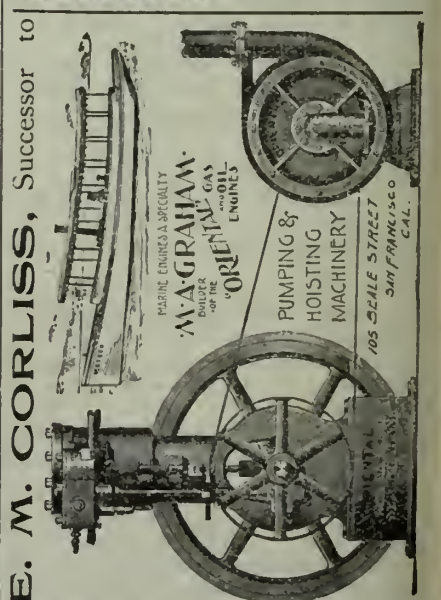
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S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, April 20, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|---------------------|--------------------|
| Wednesday..... | \$1 08 1/2 @ 1 08 | \$ 85 1/2 @ 88 1/2 |
| Thursday..... | 1 09 1/2 @ 1 11 1/2 | 87 1/2 @ 89 1/2 |
| Friday..... | 1 13 @ 1 09 | 87 1/2 @ 84 1/2 |
| Saturday..... | 1 09 1/2 @ 1 09 | 85 1/2 @ 87 1/2 |
| Monday..... | 1 10 @ 1 09 | 87 1/2 @ 85 1/2 |
| Tuesday..... | 1 09 @ 1 09 1/2 | 87 @ 87 1/2 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|-------------|------------|
| Wednesday..... | 7s 8 1/2 d | 7s 5 1/2 d |
| Thursday..... | 7s 10 1/2 d | 7s 8 1/2 d |
| Friday..... | 7s 9 1/2 d | 7s 7 1/2 d |
| Saturday..... | 7s 9 1/2 d | 7s 7 1/2 d |
| Monday..... | 7s 10 d | 7s 8 d |
| Tuesday..... | 7s 10 1/2 d | 7s 9 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|-----------------------|-----------------------|
| Thursday..... | \$1 58 1/2 @ 1 59 1/2 | \$1 55 1/2 @ 1 57 1/2 |
| Friday..... | 1 59 1/2 @ 1 59 1/2 | 1 55 1/2 @ 1 56 1/2 |
| Saturday..... | 1 60 1/2 @ 1 60 1/2 | 1 57 1/2 @ 1 59 |
| Monday..... | 1 60 1/2 @ | 1 59 1/2 @ 1 58 1/2 |
| Tuesday..... | 1 60 1/2 @ 1 60 1/2 | 1 58 1/2 @ 1 58 1/2 |
| Wednesday..... | 1 62 1/2 @ | 1 61 @ 1 59 1/2 |

Wheat.

The local wheat market has not changed materially since last review, either in quotable values or general tone. Milling wheat is not quotable over \$1.70 here, being same figure as current a week ago. More money is asked, however, and a transfer was reported at \$1.75 at Stockton. It would have to be an exceptionally fancy lot that would command \$1.75 here, and it would be misleading to name prices realized for such wheat as a regular quotation. Shipping wheat is nominally higher 2 1/2 @ 5c per cental than last quoted, with business on export account virtually stagnant. There are at this port only four ships now on the engaged list for wheat, and three of these are practically provided for at this date. While the San Francisco market has been in a sort of waiting attitude the current week, having previously advanced too sharply, and is now giving other centers a chance to catch up, the Eastern and foreign markets have developed additional strength since our last report, Chicago recording an improvement of about 3 1/2 c per bushel, while Liverpool futures advanced the equivalent of 6 1/2 c per cental on May and nearly 11c on July.

The outward movement of wheat from this port is light at present and must continue so for some time to come, as both wheat and ships are in very limited supply. Ships might be attracted here later on, with fairly remunerative freight rates, but the prospects of such rates being realized the coming season are not encouraging. Freight rates to Europe are now down close to lowest possible figures, and with the wheat yield in this State likely to prove the lightest on record for the past twenty years, there is little probability of ships being able to secure much better figures for carrying grain hence during the next twelve months than at present. A vessel in the wheat trade cleared from here the past week for Europe by way of Port Townsend, going to the latter place to complete cargo. That such a course should be necessary shows the difficulty exporters are experiencing in securing wheat, present holdings being not only limited but are valued above figures warranted by prices prevailing in foreign markets. Eastern and foreign markets developed considerable additional strength, but the foreign improvement all told was much less than the advance of the past few weeks in this center. The war scare was made responsible for most of the upward movement in Atlantic and European centers. Heavy purchases were reported in Chicago and New York for immediate shipment to Europe, so as to avoid the possibility of being exposed to the risks of war on the high seas at a later date. The Leiter interest in Chicago was reported through the telegraphic advices as still doing business at the old stand, and in the same mammoth fashion as before, with big developments just a little ahead but never materializing according to the predictions. This week Mr. Leiter has been unloading spot wheat by the millions of bushels and putting the money in July contracts, so as to be ready to take in the profits on the latter when the price ascends to the desired level.

| | |
|-------------------------------------|---------------|
| California Milling..... | \$1 65 @ 1 70 |
| Cal. No. 1 shipping, alongside..... | 1 55 @ |
| Oregon Valley..... | 1 55 @ 1 60 |
| Walla Walla Blue Stem..... | 1 55 @ 1 65 |
| Walla Walla Cluh..... | 1 50 @ 1 60 |

CALL BOARD PRICES.

On San Francisco Call Board prices for No 1 white wheat per cental for the week were as follows for the options named:

| |
|--|
| May, 1898, delivery, \$1.58 1/2 @ 1.62 1/2. |
| December, 1898, delivery, \$1.55 1/2 @ 1.61. |
| Wednesday, at regular noon session of Call Board, May wheat sold at \$1.62 1/2; December, 1898, \$1.61 @ 1.59 1/2. |

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|--------------------|--------------------|
| Liv. quotations..... | 6s 0d @ 6s 1 1/2 d | 8s 2 1/2 d @ 8s 3d |
| Freight rates..... | 17 1/2 @ -s | 18 1/2 @ -s |
| Local market..... | \$1.22 1/2 @ 1.25 | \$1.55 @ 1.60 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

The tendency of the market has been in favor of the selling interest, although quotable rates have not been changed materially

since last review. Spot supplies are not heavy, but moderate quantities are steadily arriving from Oregon and Washington. The week's exports included 26,650 barrels to China, Japan and Singapore, per the steamer Aztec, being one of the largest shipments ever made from this port to Asia.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | \$3 50 @ 3 65 |
| Superfine, good to choice..... | 3 75 @ 4 00 |
| Country grades, extras..... | 4 75 @ 5 00 |
| Choice and extra choice..... | 5 00 @ 5 15 |
| Fancy brands, jobbing..... | 5 15 @ 5 35 |
| Oregon, Bakers' extra..... | 4 65 @ 4 90 |
| Walla Walla, Bakers' extra..... | 4 65 @ 4 90 |

Barley.

Market has not been favorable to buyers since last review, but there was less excitement and less fluctuation in values than during preceding week. Prices last quoted were at what might be termed dry-season levels, so there has been no chance since then for any special upward movement. On the other hand, light spot supplies and poor crop prospects combined to make it difficult for buyers to materially depress values, although they operated as sparingly as their necessities would permit. Most of the barley now coming forward is from Oregon and Washington. Malt to the extent of two carloads arrived from the East. A ship clearing the past week for England took as part cargo 25,000 centals barley, valued at \$42,000. It is remarkable to have barley going to Europe under existing conditions, but the barley in question was secured on European account some time before barley values had been advanced materially or were being maintained at other than low levels. Market closed quiet with an easy tone.

| | |
|---------------------------------|---------------------|
| Feed, No. 1 to choice..... | 1 35 @ 1 40 |
| Feed, fair to good..... | 1 32 1/2 @ 1 35 |
| Brewing, No. 1 to choice..... | 1 42 1/2 @ 1 47 1/2 |
| Chevalier, No. 1 to choice..... | @ |
| Chevalier, No. 2..... | @ |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

| |
|---|
| May, 1898, delivery, \$1.43 1/2 @ 1.34. |
| December, 1898, delivery, \$1.40 @ 1.30 1/2. |
| Wednesday at regular noon session of the Call Board May, 1898, feed sold at \$1.34 @ 1.34 1/2; Dec., 1898, \$1.30 1/2 @ 1.33. |

Oats.

The market is about as favorable to sellers as last quoted, the comparatively stiff figures current for barley and the limited stocks of the latter combining to cause an increased demand for oats, and enabling holders to exact tolerably good prices, especially as compared with values ruling earlier in the season. Another feature in favor of oats, and of their moving rather freely, was the fact of their being obtainable at relatively cheaper figures than barley.

| | |
|-------------------------------|-----------------|
| White Oats, fancy feed..... | 1 42 1/2 @ 1 45 |
| White, good to choice..... | 1 37 1/2 @ 1 40 |
| White, poor to fair..... | 1 32 1/2 @ 1 35 |
| Gray, common to choice..... | 1 32 1/2 @ 1 40 |
| Millings..... | 1 35 @ 1 40 |
| Surprise, good to choice..... | 1 40 @ 1 45 |
| Black Russian..... | @ |
| Red..... | @ |

Corn.

Values for all varieties of this cereal are fairly well sustained, the quotable range continuing close to the improved figures noted in last issue. The higher prices recently established for other feed cereals, as also for hay and millstuffs, have considerably increased the demand for corn. There are no heavy quantities now arriving from home points of production, but considerable is coming forward from the East.

| | |
|----------------------------------|-----------------|
| Large White, good to choice..... | 1 15 @ 1 20 |
| Large Yellow..... | 1 10 @ 1 15 |
| Small Yellow..... | 1 22 1/2 @ 1 25 |
| Eastern Yellow..... | 1 05 @ 1 10 |
| Egyptian White..... | @ |
| Popcorn, shelled, # 1..... | @ |

Rye.

Values remain on a comparatively high plane, although recent arrivals have given the market a slightly better supply than for some time past.

| | |
|--------------------------|-----------------|
| Good to choice, new..... | 1 37 1/2 @ 1 40 |
|--------------------------|-----------------|

Buckwheat.

Market is higher, with little offering in this center and no indications of there being much at interior points.

| | |
|---------------------|-------------|
| Good to choice..... | 1 85 @ 1 90 |
| Silverskin..... | @ |

Beans.

Inquiry continues good, both for shipment and on local account, and all varieties are receiving attention. With continued prospects of a light yield the coming fall, the market is naturally firm. The changes in quotations, while not very numerous or pronounced, are without exception all to advanced figures. The relief is entertained by dealers competent to give an intelligent opinion on the matter that changes in values in the near future are more apt to be to higher than to lower prices. Recent shipments to the East and South by rail have been of fairly liberal proportions.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 55 @ 1 65 |
| Small White, good to choice..... | 1 60 @ 1 70 |
| Lady Washington..... | 1 60 @ 1 70 |
| Butter, small..... | 1 45 @ 1 55 |
| Butter, large..... | 1 60 @ 1 75 |
| Pinks..... | 2 50 @ 2 65 |
| Bayos, good to choice..... | 2 85 @ 3 00 |
| Reds..... | 2 15 @ 2 30 |
| Red Kidneys..... | 2 25 @ 2 40 |
| Limas, good to choice..... | 2 35 @ 2 45 |
| Black-eye Beans..... | 3 00 @ 3 15 |
| Horse Beans..... | 1 20 @ 1 30 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

A New York review of recent date, coming through by mail, has the following to say of the bean market in the East, prices quoted being per 60-lb. bushel:

Several hundred barrels of State Marrow have been exported this week, which has given the market a little steadier tone, especially during the last half of the week; shippers paid \$1.40 f. o. b. generally. Jobbing trade has continued slack, and most of it has been supplied at \$1.37 1/2. A fair

quantity of stock has arrived, but the advices from interior shippers have been somewhat conflicting and receivers have lost no opportunity to sell at quoted rates. Small beans have recovered a little from the recent depression. The decline to \$1 on Pea brought out more trade, and in a few days the price worked back to \$1.05, at which there is now a steady feeling. Medium still have some sales at \$1.05, but strictly choice lots are held mainly at \$1.07 1/2, and some business reported. It looks as if Medium and Pea will keep pretty close together during the balance of the season. One of the steamers running to southern ports of Cuba was withdrawn this week and shut off the demand for Red Kidney; but, as the stocks are not burdened and pretty well controlled, values are maintained. The price to exporters is \$1.70 f. o. b., but some nice lots have sold to the trade for less. Very few White Kidney here. Turtle Soup firmly held, but quiet. Yellow Eye neglected. Lima have steadily advanced; late sales mainly at \$1.57 1/2, but most holders are asking \$1.60. Several carloads of green peas that had accumulated on the docks were forced to sale, and went as low as 67 1/2 @ 68c; possibly the feeling is just a shade steadier at the close.

Dried Peas.

There are not many arriving at present from any quarter. Inquiry is not brisk, however, and such as is made is almost wholly for strictly choice.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 85 @ 1 90 |
| Niles Peas..... | 1 75 @ 1 80 |

Wool.

Inactivity is still the same prominent feature of the local wool market as for several months past, and there is nothing to indicate at present that business will be resumed on a lively scale in the very near future. Wools are arriving slowly, as compared with former seasons, owing mainly to lack of buyers. It is claimed that manufacturers are holding off, owing to prospects of war between this country and Spain. One of the results of war would be a stringent money market, and such a condition would seriously handicap manufacturers of woollens as well as handlers of raw material in other lines.

SPRING.

| | |
|-----------------------------------|---------|
| Oregon Eastern, choice..... | 12 @ 14 |
| Oregon Eastern, fair to good..... | 10 @ 11 |

FALL.

| | |
|------------------------|---------|
| Northern, free..... | 11 @ 13 |
| Southern Mountain..... | 9 @ 12 |

Hops.

This market is dragging wearily along as for some time past, with little or no hope entertained of any substantial improvement during the balance of the season. Quotations are little more than nominal at present, in the absence of any noteworthy or wholesale transactions. To effect free or prompt transfers, lower figures than quoted would have to be accepted.

| | |
|--------------------------------|---------|
| Good to choice, 1897 crop..... | 11 @ 14 |
|--------------------------------|---------|

The hop market on the Atlantic side is outlined as follows in mail advices from New York of recent date:

Another week has passed without change in the conditions affecting the hop market. Dealers do not report any improvement in the trade, but they have failed to see any permanent good likely to result from an effort to force business now, and stock has been carried along awaiting developments. An occasional inquiry comes from buyers, and when they want fine quality they have to pay the rates quoted. Most of the remaining lots are of lower grades, stock worth, say, 11 @ 16c, while of poor moldy Oregon there are offerings to sell at 8 @ 9c, and practically no interest in them. It is the weakness in these common qualities that seems to affect the whole market. The bulk of unsold hops in first hands in this country are the 10,000 to 15,000 haies still in Oregon, the larger part of which are common and moldy. Nearly all the California crop is gone, Washington has but few lots left, and the quantity back in this State has not been as small in several years as at the present writing. Statistically the situation is all right, but the demand is lacking, brewers still working on old stock.

Hay and Straw.

High prices are still prevailing in the hay market, but there is little likelihood of current values being long maintained. The opinion is quite general that not only have values touched zenith, but that the market is now slightly top-heavy. Buyers are operating very lightly, so that the very limited receipts are sufficient for immediate requirements. Heavier arrivals are anticipated at an early date, including consignments from several sections outside the State. Straw has been advanced materially, so as to have prices for the same more in keeping with recent values for hay.

| | |
|--------------------|---------------|
| Wheat..... | 21 00 @ 25 00 |
| Wheat and Oat..... | 30 00 @ 24 00 |
| Oat..... | 18 00 @ 22 00 |
| Barley..... | 18 00 @ 22 00 |
| Clover..... | @ |
| Stock Hay..... | @ |
| Alfalfa..... | 15 00 @ 17 00 |
| Compressed..... | 21 00 @ 25 00 |
| Straw, # bale..... | 60 @ 70 |

Millstuffs.

Market for most descriptions is showing a firm tone, in keeping with the stiff figures recently established for the unmanufactured product. The inquiry was fairly active, mainly on account of dairy stock, owing to the scarcity of green feed in many sections.

| | |
|---------------------|---------------|
| Bran, # ton..... | 21 00 @ 22 00 |
| Middlings..... | 23 00 @ 24 00 |
| Barley, Rolled..... | 24 50 @ 25 00 |
| Cornmeal..... | 24 50 @ 25 00 |
| Cracked Corn..... | 25 00 @ 26 00 |

Seeds.

Not much doing in seeds of any description. Stocks of Mustard Seed at this date are insignificant and values for the same are nominal. Flaxseed is coming forward very sparingly and receipts as a rule represent prior arrival purchases. Alfalfa is receiving scarcely any attention, there being little or no encouragement to sow the same this season, owing to lack of moisture. Bird seeds are moving slowly at previous range of prices.

| | |
|----------------------------|-------------|
| Mustard, Yellow..... | 2 75 @ 3 00 |
| Mustard, Trieste Seed..... | 2 90 @ 3 10 |
| Mustard, Wild Brown..... | 2 00 @ 2 25 |
| Flax..... | 2 25 @ 2 35 |

| | |
|-------------|---------------|
| Canary..... | 2 1/2 @ 2 3/4 |
| Rape..... | 2 1/2 @ 2 3/4 |

| | |
|--------------------|---------------|
| Hemp..... | 2 1/2 @ 3 1/4 |
| Alfalfa, Utah..... | 5 1/2 @ 6 |

Bags and Bagging.

Grain Bag market is practically lifeless, as is natural to expect, with every indication that the coming season's requirements in this State will be extraordinarily light. Oregon and Washington give promise of having big crops, but they never use bags in the same manner as this State, as much of the grain in the North is carried in elevators in bulk. Wool Sacks are meeting with moderate inquiry at former range of values.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, huyer July..... | @ |
| Calcutta Grain bags, 22x36, spot..... | 5 1/2 @ 5 3/4 |
| State Prison bags, per 100..... | 5 @ 5 1/2 |
| Wool sacks, 4 lb..... | 30 @ |
| Wool sacks, 3 1/2 lb..... | 27 @ |
| Gunnies..... | 10 @ |
| Bean bags..... | 4 1/2 @ 4 3/4 |
| Fruit sacks, cotton..... | 5 1/2 @ 6 1/4 |

Hides, Pelts and Tallow.

Hide market is showing an easy tone and a few changes to lower figures are noted in quotable rates for wet salted. Pelts are moving rather slowly at same range of prices previously quoted. Tallow is commanding fairly steady rates.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|----------|
| Heavy Steers, over 56 lbs..... | @ 10 | @ 9 |
| Medium Steers, 48 to 56 lbs..... | @ 9 | @ 8 |
| Light Steers, under 48 lbs..... | @ 8 1/2 | @ 7 1/2 |
| Heavy Cow Hides, over 50 lbs..... | @ 9 | @ 8 |
| Light Cow Hides, under 50 lbs..... | @ 8 1/2 | @ 7 1/2 |
| Wet Salted Kip..... | @ 9 1/2 | @ 8 1/2 |
| Wet Salted Veal..... | @ 10 | @ 9 |
| Wet Salted Calf..... | @ 10 | @ 9 |
| Dry Hides..... | @ 16 1/2 | @ 13 1/2 |
| Dry Kip and Veal, 11 to 16 lbs..... | @ 16 1/2 | @ 12 |
| Dry Calf, under 4 lbs..... | @ 18 @ 20 | @ 17 |
| Horse Hides, large..... | 2 25 @ 2 75 | |
| Horse Hides, medium..... | 2 00 @ 2 25 | |
| Horse Hides, small..... | 25 @ 50 | |
| Colts' Hides..... | 25 @ 50 | |
| Pelts, long wool, per skin..... | 30 @ 1 15 | |
| Pelts, medium, per skin..... | 70 @ 90 | |
| Pelts, short wool, per skin..... | 70 @ 60 | |
| Pelts, shearing, per skin..... | 15 @ 30 | |
| Deer Skins, best summer..... | 25 @ 30 | |
| Deer Skins, good medium..... | @ 20 | |
| Deer Skins, thin winter..... | @ 10 | |
| Elk Hides..... | @ 10 | |
| Tallow, good quality..... | 3 @ 3 1/4 | |
| Tallow, No. 2..... | 2 @ 2 1/4 | |
| Goat Skins, perfect..... | 30 @ 37 1/2 | |
| Goat Skins, damaged..... | 10 @ 20 | |
| Kid Skins..... | 5 @ 10 | |

Honey.

Stocks of Extracted are now so insignificant that this description is hardly quotable. Comb honey is in fair supply, but demand for the same is showing improvement, and prices are being much better sustained than they were earlier in the season.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 5 1/2 @ 6 |
| Extracted, Light Amber..... | 4 1/2 @ 5 1/4 |
| White Comb, 1-lb frames..... | 8 1/2 @ 10 |
| Amber Comb..... | 6 1/2 @ 7 1/4 |

Beeswax.

There is little of this article at present in the wholesale market, and values tend decidedly in favor of the selling interest. In a jobbing way a marked advance on quotations is realized.

| | |
|---------------------------|---------|
| Fair to choice, # lb..... | 24 @ 26 |
|---------------------------|---------|

Live Stock and Meats.

Beef market is easier, due to increased offerings and dull trade. Mutton is arriving freely and is tending in favor of buyers. Small Hogs are coming forward much faster than the immediate demand warrants. Most descriptions of live stock are being hurried to market on account of feed being scarce and high. Next fall and winter feed may be much cheaper, but live stock will likely be scarce and high.

| | |
|---|---------------|
| Beef, 1st quality, dressed, net # lb..... | 6 1/2 @ |
| Beef, 2d quality..... | 5 1/2 @ 6 |
| Beef, 3d quality..... | 4 @ 5 |
| Mutton—ewes, 8 @ -c; wethers..... | 8 1/2 @ |
| Hogs, hard grain fed, medium..... | 4 @ 4 1/4 |
| Hogs, small..... | 3 @ 3 1/2 |
| Hogs, large hard..... | 3 1/2 @ 4 |
| Hogs, soft and feeders..... | 2 1/4 @ 2 1/2 |
| Hogs, country dressed..... | 4 1/2 @ 4 3/4 |
| Veal, small, # lb..... | 6 @ 7 |
| Veal, large, # lb..... | 5 @ 6 |
| Lamb, Yearling, # lb..... | 8 1/2 @ 9 |
| Lamb, Spring, # lb..... | 8 1/2 @ 9 |

Poultry.

There were no very heavy receipts of poultry the current week, either domestic product or Eastern, but of common old stock and small young there was an abundance, as compared with the demand for the descriptions above named. Choice young stock, large and fat, continued to bring good prices, being in limited receipt and fairly active request. Some of extra size and in fine condition brought an advance on top quotations. Old chickens which were large and fat also brought an advance on quotable rates.

| | |
|------------------------------------|-------------|
| Turkeys, dressed, # lb..... | @ |
| Turkeys, live hens, # lb..... | 12 @ 12 1/2 |
| Turkeys, live gobblers..... | 10 @ 11 |
| Hens, Cal., # doz..... | 3 50 @ 4 50 |
| Roosters, old..... | 3 75 @ 4 00 |
| Roosters, young, (full-grown)..... | 7 00 @ 8 00 |
| Fryers..... | 6 00 @ 6 50 |
| Broilers, large..... | 4 50 @ 5 50 |
| Broilers, small..... | 2 25 @ 3 50 |
| Ducks, young, # doz..... | 6 00 @ 7 00 |
| Ducks, old..... | 3 50 @ 4 50 |
| Geese, # pair..... | 1 25 @ |
| Goslings, # pair..... | 1 75 @ 2 25 |
| Pigeons, Old, # doz..... | 1 25 |

which would not warrant packing local product at present figures.

| | |
|---------------------------------|----------|
| Creamery extras, # lb. | 21 @ |
| Creamery firsts. | 20 1/4 @ |
| Creamery seconds. | 20 @ |
| Dairy select. | 19 @ |
| Dairy second. | 19 @ |
| Dairy, soft and weedy. | 16 @ |
| Mixed store. | 16 @ |
| Creamery in tubs. | 20 @ |
| Pickled roll. | 20 @ |
| Dairy in tubs. | 19 @ |
| Firkin, Cal., choice to select. | 19 @ |
| Firkin, common to fair. | 16 @ |

Cheese.

There is a fairly healthy tone to the market, with demand fully as good as has been lately experienced, and supplies of local product not excessive. Stocks of Eastern are of light volume. It is reasonably certain that values for cheese have touched bedrock for the season.

| | |
|------------------------------|----------------|
| California fancy flat, new | 9 1/4 @ 10 1/4 |
| California, good to choice. | 8 @ 9 1/4 |
| California, fair to good. | 8 @ 9 |
| California Cheddar. | 10 @ 11 |
| California, "Young Americas" | 10 @ 11 |

Eggs.

A quiet market has been experienced for eggs the current week, and while values remained quothably about the same as last noted, there was an easy tone, with more or less shading of rates to buyers, especially where transfers of liberal size could be effected by so doing. The accumulations were principally of eggs direct from henneries or ranches, and such had to be sold in some instances down to the price of first-class store-gathered stock, in order to be able to effect a clean-up. Eastern eggs were in fair supply.

| | |
|---|-----------------|
| California, select, large white and fresh. | 14 @ |
| California, select, irregular color & size. | 13 @ 13 1/4 |
| California, good to choice store. | 12 @ 12 1/4 |
| California, common to fair store. | 11 @ |
| Oregon, prime. | 11 @ |
| Held Eastern, as to section and grading. | 12 1/4 @ 13 1/4 |
| Local Cold storage eggs. | 11 @ |

Vegetables.

While there were no very heavy arrivals of spring vegetables, there was some increase receipts and increase in variety. Peas, Asparagus and Rhubarb were offering at reasonable figures. String beans were again on market from Los Angeles, but quantity was limited. Choice old Onions continue to be rather steadily held. Common qualities are offering at reduced figures. New Red Onions are beginning to put in an appearance, but are so far not ripe enough to be suitable for shipment.

| | |
|------------------------------------|-------------|
| Asparagus, No. 1 to choice, # box. | 1 25 @ 1 75 |
| Asparagus, common to fair, # box. | 50 @ 1 00 |
| Beans, String, # lb. | 12 1/4 @ 15 |
| Beans, Lima, # lb. | 10 @ |
| Beans, Refugee, # lb. | 10 @ |
| Beans, Wax, # lb. | 15 @ |
| Cabbage, choice garden, # 100. | 65 @ 75 |
| Cauliflower, # doz. | 50 @ |
| Corn, Green, # sack. | 10 @ |
| Corn, Alameda, # crate. | 50 @ |
| Cucumbers, hot house, # doz. | 10 @ 1 00 |
| Egg Plant, # lb. | 10 @ 12 1/4 |
| Garlic, # lb. | 10 @ |
| Mushrooms, Buttons, # lb. | 10 @ |
| Mushrooms, Wild, # lb. | 10 @ |
| Okra, Dried, # lb. | 12 1/4 @ 15 |
| Onions, Yellow, good to choice. | 2 50 @ 3 00 |
| Onions, Yellow, cut. | 1 25 @ 1 75 |
| Peas, Sweet, Garden, # lb. | 14 @ 2 |
| Peas, Sweet, # sack. | 75 @ 1 25 |
| Peppers, Green Chile, # lb. | 25 @ 30 |
| Rhubarb, ordinary, # box | 25 @ 50 |
| Rhubarb, Mammoth, # bx. | 65 @ 75 |
| Squash, Summer, # lb. | 10 @ |
| Tomatoes, # box or crate | 1 00 @ 1 50 |

Market should have ruled decidedly firmer this week for Old Potatoes, as there was a marked falling off in arrivals, not only from points in this State, but also from Oregon. The demand was slow most of the time, however, and dealers found it impossible to realize any very appreciable advance over former figures. Beyond a little better tone, there was no improvement. Prices for New Potatoes tended downward, with most offerings of rather ordinary quality.

| | |
|---------------------------------------|---------------|
| Early Rose, River, # cental. | 60 @ 70 |
| Peerless, River. | 50 @ 60 |
| Reds River. | 50 @ 60 |
| Garnet Chile, Mission. | 50 @ 60 |
| Burbanks, Salinas. | 75 @ 1 15 |
| Burbanks, River, # sack. | 50 @ 65 |
| Burbanks, Petaluma and Tomales, # cti | 50 @ 65 |
| Burbanks, Humboldt, # cti. | 50 @ 75 |
| Burbanks, Oregon, # cental. | 55 @ 90 |
| Garnet Chile, Oregon. | 50 @ |
| New Potatoes, # cental. | 3 1/2 @ 1 1/4 |
| Sweet River, # cental. | 1 00 @ 1 25 |
| Sweet Merced. | 1 00 @ 1 25 |

The Fruit Market.

Fresh Fruits.

Apples continue to be offered in moderate quantity, mostly out of cold storage. Supplies included few strictly choice to select quality, and only the latter sort was especially sought after or could be relied on to command firm figures. The demand for apples will decrease rapidly from this time forward, as other and more seasonable fruit will be putting in an appearance in wholesale quantity in a week or two. Cherries arrived the past week in small quantity from Vacaville, but were in the main not sufficiently ripe to be desirable. Fairly good to choice were quotable in a retail way at \$1.50 @ 2.00 per box. Strawberries were not in heavy supply, but there was a material increase in receipts, as compared with previous week. Desirable qualities, however, sold to nearly as good advantage as recorded in former review. Easier rates are likely to be experienced the coming week.

| | |
|------------------------------------|-------------|
| Apples, fancy, 4-tier, # box. | 1 25 @ 1 40 |
| Apples, choice, 4-tier, # box. | 75 @ 1 00 |
| Apples, fair to good, 50-lb box. | 50 @ 75 |
| Apples, common to fair, # box. | 25 @ 50 |
| Strawberries, Longworth, # drawer. | 75 @ 1 00 |
| Strawberries, Large, # drawer. | 50 @ 65 |

Dried Fruits.

The market for cured and evaporated fruits has not shown much activity the current

week. Such stock as was sought after most eagerly was not obtainable in noteworthy quantity, while the kinds which holders were inclined to unload at rather easy rates were given in most instances very little attention by buyers. Apricot market remains firm for choice, with very few offerings at present, and no changes to record in quotable rates; but to purchase freely advanced figures would have to be paid. Prunes were in fair request on Eastern account, but buyers limited their bids to the same low figures which have been current for weeks past. The most urgent inquiry was principally for the small sizes. Peaches are being in the main steadily held, but fail to receive much attention at the full figures demanded by most holders. Nectarines are offering at comparatively low prices, but are in rather poor favor at present with buyers, either wholesalers, jobbers or retailers. Apples are ruling slow and weak, despite the fact that supplies are of small proportions. Figs have been inclining against buyers, owing to light stocks. Pears and Plums are without quotable change, but are in too limited supply to admit of any noteworthy trading. Shipments for the week include 25,750 pounds assorted stock on Saturday for British Columbia.

EVAPORATED OR BLEACHED.

| | |
|--|---------------|
| Apricots, Royal, in sacks, per lb. | 6 @ 7 |
| Apricots, Royal, fancy. | 7 1/4 @ 8 1/4 |
| Apricots, Moorpark. | 8 @ 10 |
| Apples, in boxes. | 6 1/4 @ 6 1/2 |
| Figs, fancy pressed. | 8 @ 10 |
| Nectarines, White. | 3 1/4 @ 4 |
| Nectarines, Red. | 3 1/4 @ 4 |
| Peaches, unpeeled, choice. | 4 @ 4 1/4 |
| Peaches, unpeeled, fancy. | 5 @ 5 1/4 |
| Peaches, peeled, in boxes. | 9 @ 12 |
| Pears, unpeeled Bartlett's, halved, fancy. | 7 @ |
| Pears, halved, unpeeled Bartlett's. | 4 1/4 @ 5 |
| Pears, quartered, unpeeled Bartlett's. | 4 @ 5 |
| Pears, peeled and sliced. | 4 @ 5 |
| Plums, pitted. | 4 @ 5 |
| Prunes, in sacks, 40-50's. | 4 1/2 @ 5 |
| 50-60's. | 3 @ 3 1/4 |
| 60-70's. | 2 1/4 @ 2 1/2 |
| 70-80's. | 2 1/4 @ 2 1/2 |
| 80-90's. | 2 @ 2 1/4 |
| 90-100's. | 1 1/2 @ 2 |

Above figures are on basis of 2 1/2 @ 2 1/4 c for 4 sizes. Prunes in boxes, 4c higher for 25-lb boxes, 1/4c higher for 50-lb boxes.

| | |
|-----------------------------------|---------|
| 4 sizes Santa Claras and equal. | 2 1/4 @ |
| 4 sizes San Joaquin and Northern. | 2 1/4 @ |
| Prunes, Silver. | 4 @ 7 |

COMMON SUN-DRIED.

| | |
|---------------------|-----------|
| Apricots, ordinary. | 5 @ 6 |
| Apples, sliced. | 4 @ 4 1/4 |
| Apples, quartered. | 4 @ |
| Figs, Black. | 2 @ 3 1/4 |
| Figs, White. | 3 @ 4 |
| Peaches, unpeeled. | 3 1/4 @ 4 |
| Plums, unpitted. | 1 @ 1 1/4 |

Under late date, coming through by mail from New York, an Eastern authority publishes the following review of the dried fruit market:

There has been some export demand for evaporated apples this week, and also a fair jobbing demand; but season is getting late, and with a little more pressure to move stock, market has weakened slightly, and prices show a slight decline. Prime have sold at 8c, both for wood and wire-dried, and to force sales that is all that can be realized, although some holders refuse to consider a less bid than 8 1/4c, and, while we retain it as an outside quotation, it is exceptionally high. Choice are jobbing at 8 1/4 @ 8 1/2c, rarely higher, and fancy to extra fancy range from 8 1/2 @ 9 1/4c, latter figure being very full. Not much doing in sun-dried, and prices a shade lower, with outside figures very extreme. Chops firm, though to extreme; some bags have sold at 3 1/4c. Cores and skins about steady. Small fruits are in light supply and quiet, but held about the same in price. California apricots firmer, owing to reports of damage by frost, though 12c extreme for Moorpark's—in fact, few sales above 10c; peaches quiet and outside figures rather full; other California fruits unchanged.

| | |
|--|---------------|
| Apricots, Cal. Moorpark, 1897, per lb. | 8 @ 12 |
| Apricots, Cal. Royal, 1897, per lb. | 6 1/4 @ 8 1/4 |
| Peaches, Cal., 1897, peeled, per lb. | 10 @ 16 |
| Peaches, Cal., 1897, unpeeled, per lb. | 5 @ 9 |
| Pears, Cal., 1897, per lb. | 5 @ 10 |
| Prunes, Cal., 1897, per lb. | 3 @ 8 |

Raisins.

Trade is of insignificant proportions, values remaining nominally as last noted. Rain-damaged stock is still burdening the market in heavy quantity, and seems likely to do so until the end of the season. If this inferior fruit were out of the way, there would probably be little trouble experienced in effecting a clean-up at current rates of all the better grades.

F. O. B. FRESNO DELIVERY.

| | |
|--------------------------------|---------------|
| Imperial Clusters, per box. | — @ — |
| Dehesa Clusters, per box. | — @ — |
| Fancy Clusters, per box. | — @ — |
| Boxes, London layers, 30-lb. | 1 00 @ |
| (Usual advance for fractions.) | |
| Loose Muscatel, 4-crown, # lb. | 3 1/4 @ |
| Loose Muscatel, 3-crown. | 2 1/4 @ 2 1/2 |
| Loose Muscatel, 2-crown. | 1 1/4 @ 1 1/2 |
| Sultanas. | 3 @ 3 1/4 |
| Seedless Muscatel. | 1 1/2 @ 2 |
| Dried Grapes. | 1 @ 1 1/4 |

Citrus Fruits.

Orange market is firmer for choice to select Navel, owing to prices having been advanced at producing points. Values for common Navels and ordinary Seedlings were without material improvement. Demand for choice to select oranges was fair. Lemons of high grade were not in excessive supply and inclined against buyers, but common qualities remained cheap. Limes sold at previous range, with only moderate stocks.

| | |
|-----------------------------|-------------|
| Oranges—Navel # box. | 1 50 @ 2 75 |
| St. Michaels. | 1 00 @ 1 75 |
| Seedlings. | 65 @ 1 35 |
| Tangerines, half box. | 50 @ 75 |
| Lemons—Cal., select, # box. | 1 75 @ 2 00 |
| Cal., good to choice. | 1 00 @ 1 25 |
| Cal., common to good. | 50 @ 1 00 |
| Limes—Mexican, # box. | 4 00 @ 4 50 |
| Cal., small box. | 50 @ 1 00 |

Nuts.

Almonds of fine quality are scarce and high, with prospects of so continuing. Walnut market shows steadiness, there being absence of selling pressure. Peanuts are ruling fairly steady, with demand not very brisk.

| | |
|----------------------------------|-----------|
| California Almonds, paper shell. | 9 @ 9 1/4 |
| California Almonds, soft shell. | 6 @ 8 |
| California Almonds, hard shell. | 4 @ 4 1/4 |
| Walnuts White, paper shell. | 7 @ 8 |
| Walnuts White, soft shell. | 7 @ 8 |

| | |
|--------------------------------|---------------|
| Walnuts White, Cal., standard. | 5 1/2 @ 6 1/4 |
| Chestnuts, Cal. Italian. | — @ — |
| Peanuts, Cal., fair to prime. | 3 1/4 @ 4 1/4 |
| Peanuts, Eastern hand-picked. | 5 @ 6 |
| Pine Nuts. | 7 @ 8 |

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|----------------|--------------------|----------------------|
| Flour, M-sks. | 107,059 | 4,176,291 |
| Wheat, cts. | 81,116 | 9,505,922 |
| Barley, cts. | 15,830 | 4,296,110 |
| Oats, cts. | 13,660 | 582,644 |
| Corn, cts. | 7,855 | 263,008 |
| Rye, cts. | 330 | 35,898 |
| Beans, sks. | 3,627 | 515,606 |
| Potatoes, sks. | 18,226 | 956,239 |
| Onions, sks. | 1,581 | 93,816 |
| Hay, tons. | 1,257 | 107,726 |
| Wool, bales. | 3,336 | 58,133 |
| Hops, bales. | 30 | 8,362 |
| | | 7,081 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|-----------------|--------------------|----------------------|
| Flour, M-sks. | 115,816 | 2,683,716 |
| Wheat, cts. | 202,187 | 9,391,797 |
| Barley, cts. | 4,492 | 3,942,755 |
| Oats, cts. | 63 | 15,209 |
| Corn, cts. | 61 | 34,968 |
| Beans, sks. | 1,219 | 240,866 |
| Hay, bales. | 793 | 70,011 |
| Wool, lbs. | — | 13,701,776 |
| Hops, lbs. | 310 | 1,239,348 |
| Honey, cases. | 4 | 7,091 |
| Potatoes, pkgs. | 1,323 | 176,634 |
| | | 73,026 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, April 20.—California dried fruits: Apples firm; other fruits steady. Evaporated apples, common, 7 @ 7 1/4c # lb.; prime wire tray, 8c; wood dried prime, 8 1/4c; choice, 8 1/2c; fancy, 9 @ 9 1/4c. Prunes, 3 1/4 @ 3 1/2c # lb. Apricots, Royal, 5 1/4 @ 5 1/2c; Moorpark, 8 1/4 @ 10c. Peaches, unpeeled, 5 @ 8c; peeled, 11 @ 14c.

—Moore, Ferguson & Co., of San Francisco, have bought 100,000 bushels of wheat in Linn Co., Or. The price was 70 cents net to the farmers.

MOORE, FERGUSON & CO.

WOOL, GRAIN, FLOUR

—AND—

General Commission Merchants.

310 CALIFORNIA ST., S. F.

Members of the San Francisco Produce Exchange.

Personal attention given to sales and liberal advances made on consignments at low rates of interest.



Save Your Crop

Costs about ONE CENT PER HOUR.

Buy a HERCULES GASOLINE ENGINE PUMPING PLANT; from 2 to 200 H. P.

The best, most reliable, economical, never-failing plant in the market—fully guaranteed—for pumping, irrigating, running fruit graders, dryers, etc.

Write What You Want. Hercules Gas Engine Works, 215-231 Bay St., S. F.

A \$1 RAISIN SEEDER FOR 50 CTS. Post-paid.

We are tired of selling dealers and waiting 90 days for our money, so we will sell housekeepers at Jobbers' prices. Send 50 cents, and we will mail you postpaid one of our best Bay State Raisin Seeders. Guaranteed to seed 1 lb. of raisins in 5 minutes. Simple to operate and easy to clean. Easton Specialty Mfg. Co., 64 Federal St., Boston.

BARGAINS!



Rushford Farm Wagon Gears.

| No. | Axle. | Tire. | Capacity. |
|-----|----------------------|-----------|------------|
| 47 | 2 1/4 Hollow Steel. | 2 Inch. | 2,500 lbs. |
| 47 | 2 1/4 " " " | 3 " " | 2,500 " " |
| 48 | 2 1/4 " " " | 2 " " | 4,000 " " |
| 49 | 2 1/4 " " " | 2 " " | 5,000 " " |
| 49 | 2 1/4 " " " | 2 1/2 " " | 5,000 " " |
| 50 | 2 1/4 " " " | 3 " " | 6,500 " " |
| 51 | 3 1/4 " " " | 3 " " | 8,000 " " |
| 52 | 3 1/4 " " " | 3 " " | 10,000 " " |
| 53 | 1 1/2 Concord Steel. | 3 " " | 4,000 " " |
| 18 | 3 1/4 Steel Skel. | 2 " " | 5,000 " " |
| 19 | 3 1/4 " " " | 2 1/4 " " | 5,000 " " |

The above are our GREEN LIST Wagons. As we are overstocked on these sizes we can offer bargain prices without regard to our cost.

HOOKE & CO.,

16 and 18 Drumm Street, San Francisco, Cal.

'TIS FOR YOU.

RADAM'S MICROBE KILLER is a stimulant of the digestive functions and an intestinal antiseptic of incontestable therapeutic properties, free of drugs and poison. See reports of highest medical and scientific authorities. Drugs and poison fail; M. K. never fails. Bottle \$1.00. It will pay to investigate it. Call or write for complete proofs.

RADAM'S MICROBE KILLER CO.,

1340 MARKET ST., SAN FRANCISCO, CAL.

—BRANCHES:—

212 S. Spring St., Los Angeles, Cal.
41 S. Second St., San Jose, Cal.
360 Morrison St., Portland, Or.
1010 First Avenue, Seattle, Wash.

For Planting Season of 1898

We offer for sale a choice lot of

Budded Orange and Lemon Trees,

One and two-year buds of the leading varieties, on sour or sweet stock.

Prices to Suit the Times.

SEEDLING ORANGE TREES at your own price. Correspondence solicited.

Oroville Citrus Association,

Oroville, Butte Co., Cal.

ROSES!

10 Ever-Blooming, Field-Grown Roses for \$1.

Eight thousand Roses, field-grown, two-year-old plants, have to be closed out. These consist of the best ever-blooming varieties, and will be sold at 10 plants for One Dollar, sent by express or delivered in the city of San Francisco. These Roses are in first-class condition and are bound to give satisfaction. No order filled for less than One Dollar. I name a few varieties, as space does not permit of the naming of the whole list: Aurora, Archduchess Marie Immaculate, Bon Seline, Bongere, Beauty of Stapleford, Cath. Mermet, Cheshunt Hybrid, La France, Celine Forrester, Cameons, Capt. Christy, C. Riza du Parc, Cecil Brunner, Duchess de Brabant, Duchess of Albany, Dr. Pasteur, Etiole de Lyon, Eliza Sauvage, Francisca Kruger, Gen. Dubois, Fursten Bismark, Gen. de Tartar, Jean Ducher, La Marquis, Mad. Cochet, Desire, Falcot, Hoste, Lambert, Schwallier, M. v. Houtte, Malmalson, Sunset, Queen, Papa Goutier, Rainbow, and a good many other varieties. F. LUDEMANN, Pacific Nursery Baker and Lombard Sts., San Francisco, Cal.

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Has a National reputation for good work. Its Departments of Bookkeeping and Business Practice, Shorthand and Typing, Penmanship, Modern Languages, English Branches, Telegraphy, Civil, Mining and Electrical Engineering, Surveying, Assaying, etc., are practical in every detail, as is attested by the 16,000 graduates who are now successfully applying their knowledge. Students can enter at any time. Ladies admitted to all Departments. Pupils receive individual instruction. Twenty teachers. Moderate charges. Write for Catalogue and College Journal.

AMERICAN AND FOREIGN PATENTS

CAVEATS, TRADE MARKS. DEWEY, STRONG & CO. 330 MARKET ST. S. F.

GOOD HEALTH.

Sanitation in Country Homes.

(Concluded from last issue.)

Disinfecting Pencils.—The vile habit of swapping gum is one happily falling into disuse. But in primary schools the custom still prevails of gathering the lead pencils at the end of a session and distributing them indiscriminately at the beginning of the next. These pencils are frequently in the mouths of the children, which cannot be prevented.

It would seem that at small cost a method of sterilizing by the use of formalin or formaldehyde gas in the same manner as books are disinfected in the New York library and cars at the end of runs or in the case of contagious diseases at home. In the latter case an inexpensive vaporizer consisting of a shallow cup supported over an ordinary cheap lamp is used, with wood alcohol for the flame, the cup is nearly filled with a solution of about one part of 40 per cent formalin and five parts of boiling water. The flame is so adjusted as to keep the solution just at the boiling point. This could be placed in a box with a perforated shelf on which the pencils are placed and so accomplish the desired end.

Barber Shops.—There is another source of infection from which the country villages are not free—the barbers are uniting in order to enforce more stringent regulations. All instruments are required to be of metal as far as possible, so as to be easily sterilized. If surgeons and dentists are morally under obligations to disinfect their instruments, why should not barbers be held as responsible for brushes, combs, towels, sponges, etc.? How a man particular in his own home as to his brush, comb, towel, razor, etc., can reconcile himself to go to a barber's and step into the chair just vacated by one, perhaps, with ulcers on his face, or some skin disease, and leaning back contentedly resign himself to the tender mercies of the barber who has just finished with the other man, and does not even wash his hands before attending the next customer, passes my comprehension.

Instances in numbers might be collected where disease has been transmitted in this way. In New York the barbers' association asked for sanitary laws. Many of the dispensations of Providence, so called, are preventable by ourselves. The command, "Thou shalt not kill," is violated by our neglect to remove all conditions destructive to health. Sanitation means frugality, temperance, exercise, pure air, healthful food, comfortable dress and cleanliness, everywhere followed by health, peace and comfort.

Sanitation Should be Taught.—I hope to see the principles of sanitary living taught in the common schools and practiced in every home, including a knowledge of domestic chemistry. No man or woman who stops to consider how many healthy men, women and children there are, but will ask if we are living up to the light we have. We received from the eighteenth century a legacy of filth. What shall we give over to the twentieth? Will our children inherit the enfeebled bodies and brains we generate from our own impaired vitality, or that perfect constitution the Creator intended man to possess to pass on like an entailed estate from one generation to another? Do we have that care for our children that antedates their existence, which

Deafness Cannot Be Cured

By local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars, free. F. J. CHENEY & CO., Toledo, O. Sold by Druggists, 75c. Hall's Family Pills are the best.

garners our best qualities for their inheritance, that builds by atoms the sound body as a fit temple for the unimpaired mind? Finally what is our duty to those about us, ignorant of the knowledge we possess? Are we our brother's keeper?

In the April *Century* there are several papers devoted to the Pennsylvania coal regions. H. E. Rood writes of "A Polyglot Community." He says, concerning the foreign miners: The first purchase made by Slovak or Polack is a revolver, by Italian or Sicilian a stiletto; then the newcomer buys a silver watch; and after that is secured he begins to save money. If the Slovak or Polack is particularly thrifty, he postpones buying a revolver for several months, and carries in one pocket a round, hard stone, large enough to crush a man's skull, and in another a piece of iron filched from the colliery scrap heap. The Italian or Sicilian, too poor or too penurious to afford a stiletto, buys, begs or steals a long file, and sits down in his shanty or by the roadside, with two or three stones, and grinds it to a keen edge and a needle-like point. Then he fastens the blunt end in a corn cob, and has ready for use a weapon of no mean possibilities. Once armed, however, and provided with a watch, the foreigner manages to live at a total expense of about \$6 a month—and this may be regarded as a liberal estimate in most instances. The remainder of his wages is saved toward the purchase of a vineyard or farm in the old country, whither almost all expect to return and spend their lives.

Gained 22 Pounds in 5 Weeks

From the By-Stander, Macomb, Ill.

Alderman Louis W. Camp of our city, has quite astonished his friends of late, by a remarkable gain in weight. He has gained 22 pounds in five weeks. Those of his friends who do not know the facts of his sickness will read with interest the following.

"I was broken down in health and utterly miserable," said Mr. Camp to our reporter. "I was unable to work much of the time and so badly afflicted with a form of stomach trouble that life was a veritable nightmare. I tried various remedies, but during the six months of my sickness I obtained no relief. I had always been a robust, healthy man and sickness bore heavily upon me."

"About two years ago I was advised to try Dr. Williams' Pink Pills for Pale People. I purchased one box and received so much benefit that I used five more and was entirely cured. I gained twenty-two pounds in five weeks. Since I stopped taking the pills I have scarcely had an ache or pain."



Interviewing the Alderman.

"Dr. Williams' Pink Pills restored me to health and I most heartily recommend them." L. W. Camp on oath says that the foregoing statement is true.

W. W. MELOAN, Notary Public. Following is the physician's certificate as to Mr. Camp's present condition.

I am a regularly licensed physician of Macomb, McDonough County, Ill. I have very recently examined Mr. L. W. Camp as to his general physical condition, and find the same to be all that could be desired, appetite and digestion good, sleeps well, and has all the evidence of being in a good physical condition. SAM'L RUSSELL, M. D.

Subscribed and sworn to before me this 30th day of September, 1897.

W. W. MELOAN, Notary Public.

—W. B. Howell, Assistant Secretary of the Treasury, gives notice that the following places in Alaska have been designated as ports of entry: Juneau, Unalaska, May Island, Kodiak, Wrangel, Circle City, Cook's Inlet (Saldonia), St. Michaels Island, Karluk, Unga, Dyea (including Skaguay) and Orca.

—Eastern Nevada cattlemen say that the drought will strike Nevada on account of the little snow on the mountains. The Humboldt river now contains only 10,000 inches of water.

FOR ALLAYING HOARSENESS AND IRRITATION OF THE THROAT, "Brown's Bronchial Troches" are wonderfully effective. Avoid imitations.

—The San Francisco and San Joaquin Valley Railroad has let contracts for the grading, at a cost of about \$200,000, of eleven miles of road adjacent to the entrances to the long tunnel near Rodeo, Cal.

NO MISTAKE. Thousands have been cured promptly of

NEURALGIA BY

SAINT JACOBS OIL

A NEW BOOK.

THE CALIFORNIA VEGETABLES

IN GARDEN AND FIELD.

A MANUAL OF PRACTICE WITH AND WITHOUT IRRIGATION, FOR SEMI-TROPICAL COUNTRIES.

By EDWARD J. WICKSON, A. M.

Professor of Agricultural Practice in the University of California; Author of "California Fruits and How to Grow Them;" President of the California State Floral Society; Horticultural Editor of the "Pacific Rural Press" of San Francisco, etc.

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| | XXXIX. Weeds in California. |

COMMENDATIONS BY THE PRESS.

The work will be of inestimable assistance to those who are interested in vegetable growing in California, not only on a large scale, but to the large number who cultivate these products for their own consumption.—*San Francisco Call*.

We take no risk in advising every Californian who has a garden spot to procure a copy.—*San Francisco Chronicle*.

Not only interesting but valuable to every one in this State who cultivates ever so small a lot of ground. The author is eminently qualified for the work which he has just completed.—*San Francisco Bulletin*.

For many years there has been an inquiry for a work on vegetable growing in California, and in this book the demand has been adequately met.—*California Fruit Grower*.

It is certain to be of valuable assistance to the practical farmer.—*Oakland Enquirer*.

It is really almost invaluable, we should judge, to those who desire to be informed upon every essential point connected with vegetable growing in the various soils and climates of this State.—*Sacramento Bee*.

It is an exhaustive exposition of the cultivation of vegetables in this State. There is a fund of information in it which is invaluable and indispensable for the man who would make a success of vegetable growing.—*Alameda Enquirer*.

This treatise will be conceded to be an authority upon the subject of California vegetables. It ought to have a very wide circulation.—*Woodland Democrat*.

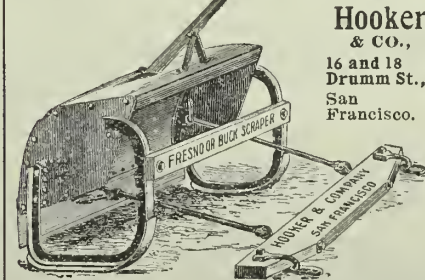
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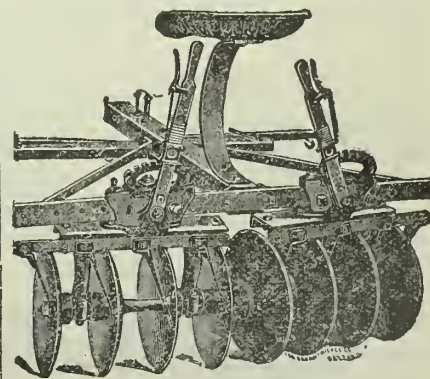
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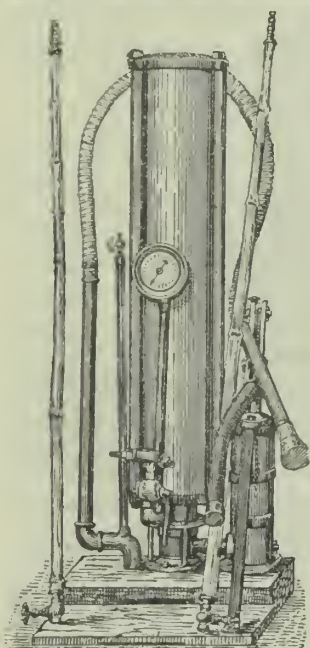
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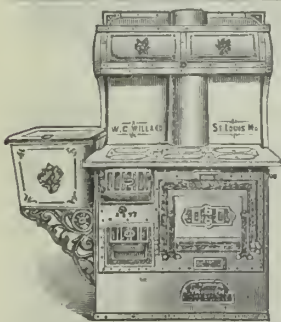
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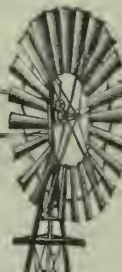
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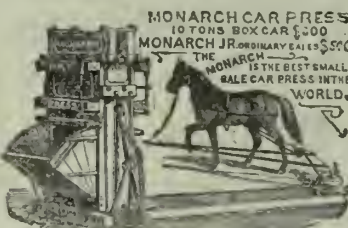


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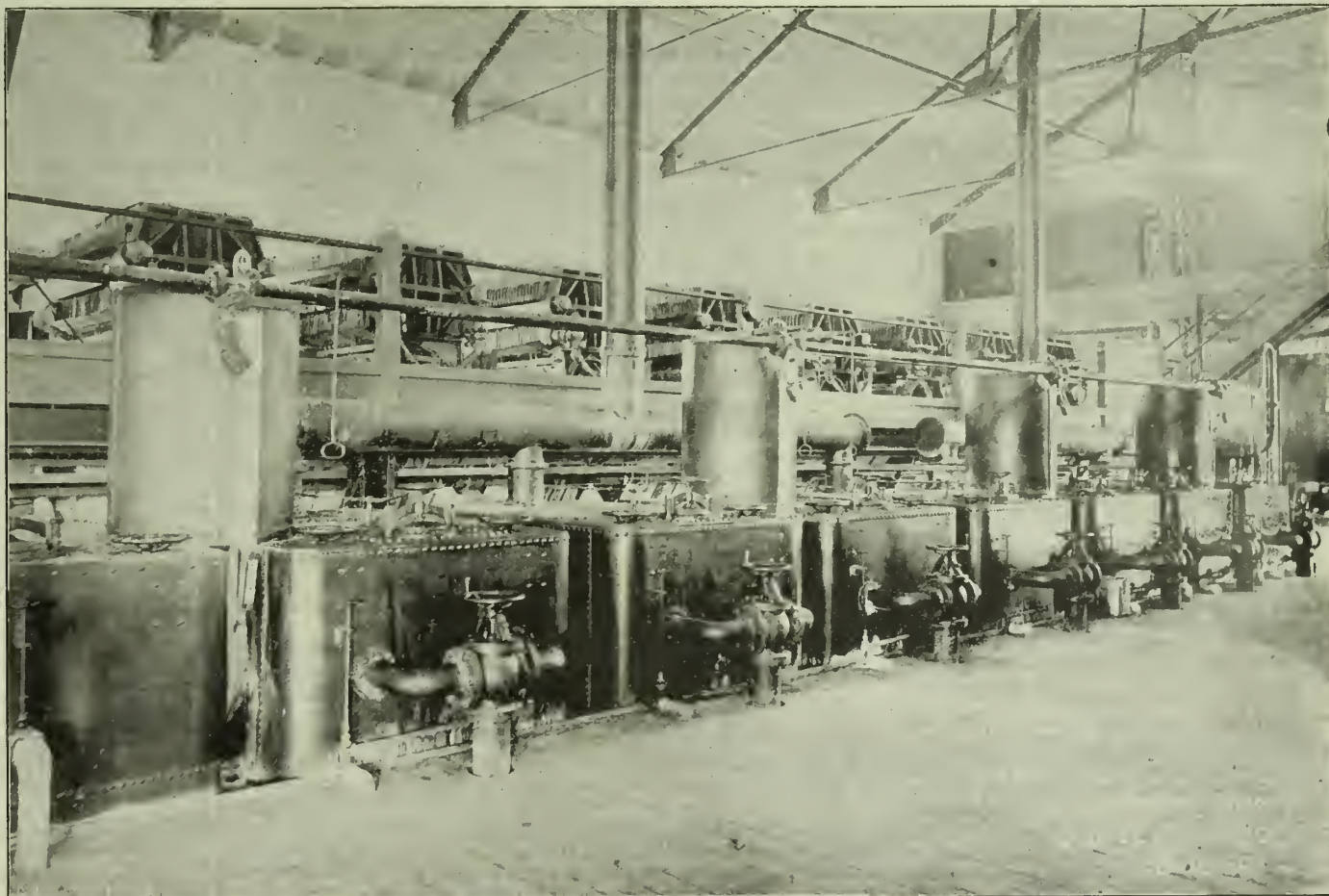
Vol. LV. No. 18.

SAN FRANCISCO, SATURDAY, APRIL 30, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

Clarifying the Beet Juice.

Last week we followed the beet juice from the cleaned and sliced root through the diffusion battery in which it yields the sugar contents to the hot water, which invites the diffusion of the saccharine matter through the cell walls of the beet into the water. This process secures the sugar solution with much less of the impurities of the beet than if the root were crushed and the juice expelled by pressure, but the liquid still contains impurities which must be removed before it can go farther on its course toward the sugar bowl. This is now accomplished by the use of lime and carbonic acid gas, and is essentially different from the old process of lime defecation which was formerly employed. The upper engraving, which is an interior view of the Los Alamitos factory, shows the carbonation tanks in which the lime and carbonic acid are brought into contact with the juice. From the diffusion battery the juice flows into a heater and is raised to 190° Fahr., which coagulates the albuminoids, just as boiling solidifies the white of an egg, and they are easily removed. Freed from this class of impurities, the juice then flows into the square



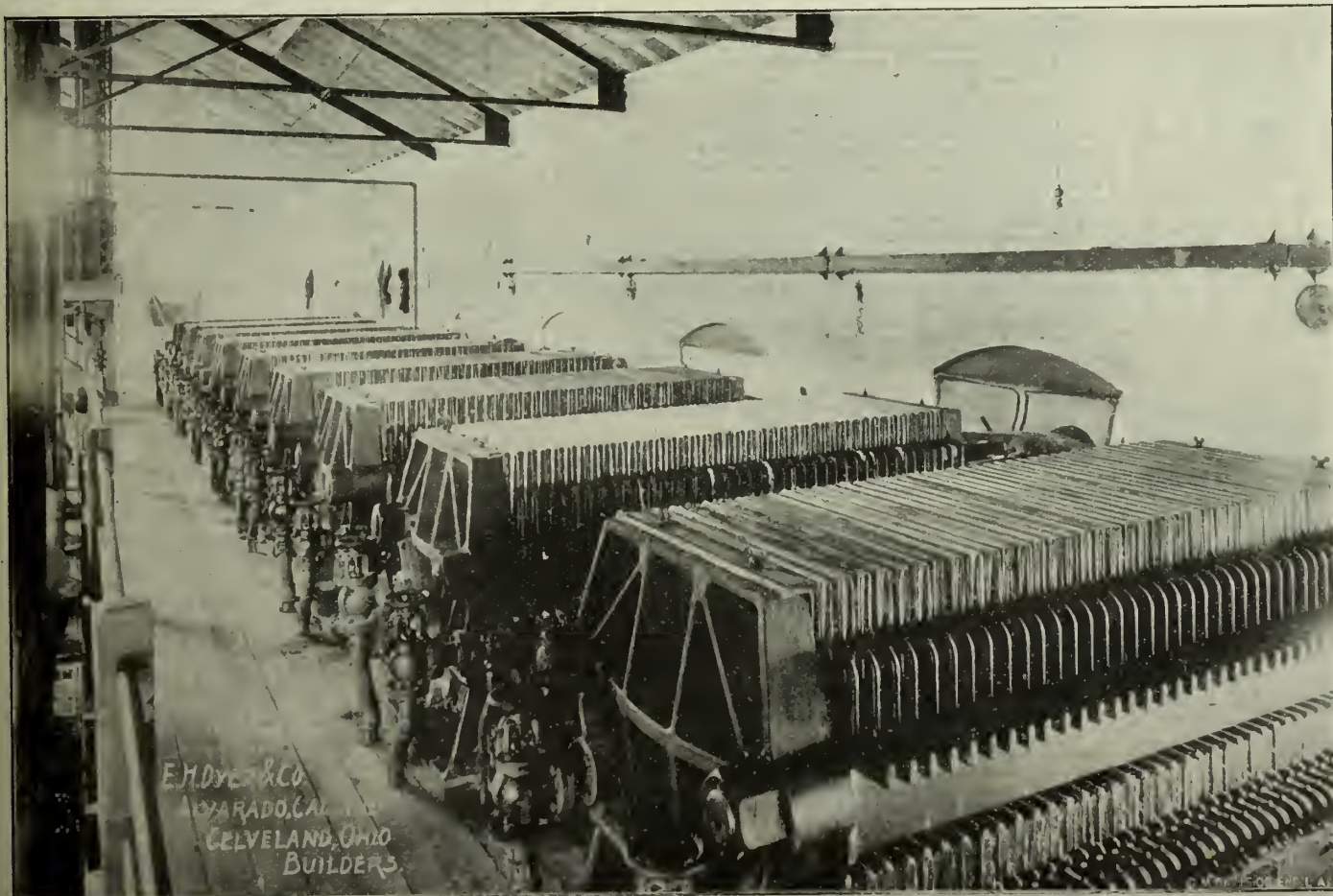
THE CARBONATION TANKS IN WHICH THE BEET JUICE IS TREATED WITH LIME AND CARBONIC ACID.

iron tanks shown in the picture, and there it is mixed with a small amount of milk of lime, and this lime solidifies another lot of liquid impurities. But the lime also unites with the sugar, and this combina-

tion is broken, allowing carbonic acid gas to enter the liquid. This unites with the lime and throws it down as a carbonate of lime and destroys its appetite for sugar. But as the lime has to be held back from

appropriating the sugar, so the carbonic acid gas must be held in check, or else it would go on destroying other compounds of lime until the impurities which the lime first seized would be set free again, and the sugar maker's cake would be all dough again. There is a very nice play of chemical affinities in these carbonation tanks, and it has to be watched with the greatest care by the factory chemists.

The juice must be freed from the lime compounds by means of the filter presses shown in the lower engraving. It is pumped into the filters, which are composed of iron frames with screens and filter cloths. The frames are pressed firmly against each other and the juice flows through the cloth which they hold in place. The lime compounds are held on the filters. Hot water is also pumped through, and that washes the filter from what sugar solution remains among the particles of lime and saves it.



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ALFRED HOLMAN.....Editor.
E. J. WICKSON.....Special Contributor.

San Francisco, April 30, 1898.

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BUSINESS ANNOUNCEMENTS.

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Weather and Crops.

There is no more comfort in the "weather tables" than before, but there is a little lining to the cloud in the reports that the fruit crops are likely to be better than expected and that even some fields may follow in the same line. We hope that all the better reports which are being circulated will prove true, but people who have crops must be on their guard against depression of prices by industriously circulated reports of improved prospects. With the best that can possibly be gathered from trees or from fields this year, there will still be a large reduction from average figures, taking the State as a whole, and values should somewhat compensate for the loss in volume.

The following data for the week ending 5 A. M., Wednesday, April 27, 1898, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Last Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | .06 | 31.21 | 48.73 | 42.55 | 42 | 62 |
| Red Bluff..... | .00 | 12.30 | 24.13 | 23.99 | 46 | 96 |
| Sacramento..... | .00 | 8.67 | 17.20 | 19.57 | 46 | 90 |
| San Francisco..... | .00 | 7.75 | 22.90 | 23.30 | 46 | 73 |
| Fresno..... | .00 | 4.01 | 10.52 | 9.35 | 44 | 100 |
| San Luis Obispo..... | T | 6.05 | 20.71 | 19.57 | 38 | 94 |
| Los Angeles..... | T | 5.26 | 16.76 | 16.66 | 44 | 94 |
| San Diego..... | .00 | 4.18 | 11.66 | 10.10 | 52 | 82 |
| Yuma..... | .00 | 1.66 | 5.35 | 3.00 | 54 | 104 |

* No record.

The Produce Markets.

The war and the weather are chiefly responsible for the heavy advance in wheat, which will be found fully reported on another page. To-day (we write on Wednesday) spot milling wheat is worth \$1.87½ in this market—an advance of 15¢20 cents since our last writing one week ago. The sudden strengthening of the English market is due chiefly to the wish to stock up against the chances of war, and in part to unfavorable reports from the Russian grain districts.

Contrary to all expectations, barley is weaker; and the cause is to be found in heavy importations of corn, which promises to be largely substituted for barley in feeding. Oats, too, are coming in freely from Oregon and Washington and are offered at prices which have made barley holders knock under to some extent.

Hay is also weaker, though there is a desperate effort to bolster the price on the part of some local dealers who have loaded up heavily at the high figures of late prevailing. It is found that the home supply of hay will be larger than recently expected, owing to the fact that many fields which will not make wheat may be profitably turned into hay. Eastern timothy is now offered here laid down at

\$14@15 per ton; and there is also promise of a liberal supply from Oregon if it shall be needed. Mill feeds are easier for pretty much the same reasons affecting barley and hay.

Beans, especially the white varieties, are strong and higher.

Live stock is weak all along the line and offerings are excessive. Hides are unchanged. Nothing is doing in wool.

Butter is easier, though our market is still above Eastern prices. Eggs are holding their own.

The only feature of interest in the dried fruit market is an active demand for prunes, which, for all but the very large sizes, are a quarter of a cent higher. The demand is almost wholly for the small sizes.

Fruit Growers and Nicaragua Canal.

TO THE EDITOR:—As chairman of Nicaragua Canal Committee, appointed by the State convention of horticulturists at Los Angeles, I should like to set before your readers the resolution then passed. It read about as follows:

Resolved, That this convention of fruit growers, assembled this 11th day of April, 1898, at Los Angeles, at the call of the California State Board of Horticulture, impressed with the belief that the future of their industry depends upon the improvement of transportation facilities, demands from the Republican party the redemption of the promise, made in its platform of 1896, as to the building, owning and operating of the Nicaragua canal, and requests Senators and Congressmen of all political parties to unite to further such legislation as shall tend to the immediate construction of this canal.

It was further resolved to ask Senator G. C. Perkins to take charge of the matter in the Senate.

Of course, during the present war fever, any immediate action is unlikely, though the present peril of the battleship Oregon may serve to emphasize the immense and various benefits that would accrue to the nation at large from the construction of the canal.

But, apart from the war, politicians are already preparing for the political campaign. Partisan issues then become what are called "red-hot politics!" The general good is too often forgotten in the struggle for personal advancement, which advancement is usually the end of red-hot politics.

"Each honorable doughface gets just what he axes,
And the people their annual soft-sawder an' taxes."

Let every man with the interest of his State and nation at heart insist on making the construction of the Nicaragua canal "red-hot politics," and then keep the issue "red hot" until the canal is daily traversed with shiploads of California fruits and grain and farm and mill products of all sorts, transported to profitable markets by a method that does not claim "all the traffic will bear." So mote it be!

Messrs. Alex. Gordon of Fresno and A. R. Sprague of Los Angeles are the other members of the committee. Give us all the help and support you can! We want your help, reader!

Pacific Grove, Cal.

EDWARD BERWICK.

Treatment for Discharging Sore.

TO THE EDITOR:—I have a calf fifteen months old; I fed a good deal of barley hay until the feed got good. Four months ago she refused to eat at all, and we kept her alive for two weeks by pouring one gallon new warm milk and two eggs down her throat from a bottle twice a day; also used enema of five gallons warm water once a day for some time until she began to eat grass, and howls were normal.

After she began eating again, two swellings resembling holls appeared, one at back point of bone on left shoulder joint and the other opposite on the lower part of body. We let them both ripen until a soft part could be plainly felt, then lanced each, and a quantity of greenish yellow water, very bad smelling, rushed out. We used carbolic and hot water, and kept it very clean. The matter came away freely and drained well. The calf is not lame, and eats well, but those two openings keep on discharging a quantity of very thick, yellowish matter, very bad smelling.

The past week I have stopped using carbolic and have used pretty warm water to cleanse the passages, which run from the opening on the shoulder point on leg to the point opposite on underneath of body; both places run freely. Then I have injected six ounces of Marchand's peroxide of hydrogen.

I want to know if I may use carbolic in the hot water, then the peroxide after; or if there is any other treatment that will cure the calf?

After lancing the two boils and using the carbolic and hot water a few days, a great deal of fleshy, light yellowish core came out at both openings.

I have doctored her thoroughly once a day, and am anxious to save her as she is thoroughbred Jersey.

READER.

ANSWER BY DR. CREELY.

Insert a probe into the wound; when the bottom is found, insert a sharp knife and rip it up and down. Make a wound large enough to insert the hand. A lot of dead, ragged flesh will be found which must be removed. Scrub it out thoroughly with creoline, one tablespoonful in two quarts of warm water. After drying smear over the wound iodoform salve. If there is much bleeding, it can be easily stopped by applying a sponge tightly into the wound.

Horse With Blood Disease.

TO THE EDITOR:—Would like to ask Dr. Creely, through the PRESS, what is the disease and the remedy of my horse, a four-year-old gelding, running out on green feed. His skin is rough, with hard places all over, like the hives. His eyes are bad, with a dull look; not much appetite.

Henleyville, April 4, 1898.

J. M. HOWELL.

A blood disease, hard to treat. Green grass is very beneficial. Give the following powders internally: Iodide potash, 1½ ounces; nitrate posash, 4 ounces; sulphate iron, 1 ounce. Mix and make twelve powders; give one daily.

DR. CREELY.

Weather and Crops.

SUMMARY OF THE REPORT OF THE U. S. WEATHER SERVICE FOR THE WEEK ENDING APRIL 25, 1898.

The drouth continues in California. Like the preceding week, the total rainfall reported from the various Weather Bureau stations was but 0.02 inch, which fell at Eureka. Weekly deficiency varies from eight-tenths of an inch at Eureka to a quarter of an inch at Fresno and Los Angeles. At Sacramento the weekly deficiency is half an inch. The absence of even moderate late spring rain completes the damage begun earlier in the season. In the interior of the State the temperature has averaged from three to five degrees above the normal; along the central and northern coast it has been about normal, and in southern California about four degrees above the normal. As previously reported, grain and hay show the effect of the continued dry weather, and in most sections are beyond recovery. It has been necessary in the grazing sections of the lower coast to ship away cattle and horses. Fruit is doing fairly well, but orchards must be irrigated. In the Santa Clara valley the pumps are going day and night. Grapes are making good growth. Thrips are reported near Fresno. Cherries are ripening rapidly. Prunes promise well and pears are doing finely.

SHASTA.—Still dry. Grapes are doing nicely. Good prospect for a fair crop of apples. A good deal of stock has been driven north during the week.

GLENN.—Prospect for wheat improving. With seasonable weather will have feed for stock and some wheat.

BUTTE.—Northwest winds. Oranges setting finely; good crop anticipated. Hay and grain crops very light.

SACRAMENTO.—Crops look badly. Weather very unfavorable for grain. Hay cutting commenced; will prove a fair crop on account of failure of grain.

YOLO.—Fruit trees making big growth; foliage heavy. Prospect brighter unless fruit should drop off on account of drouth.

SOLANO.—Some early hay being cut; crop very short. Cool south winds early part of week beneficial to grain. Apricots and prunes better than expected. Hot north winds ripening cherries fast. Rain needed to insure vegetable crop.

PLACER.—Grain and hay still green and fresh; grass beginning to dry. Strawberries and cherries coming on. Fruit growers irrigating.

EL DORADO.—Dry weather continues to reduce prospects for all crops. Practically no hay or grain, but fair chance for partial crop of pears, prunes, apples and wine grapes.

MERCED.—Very dry. Summer-fallow grain looking well. Hot north wind. Crops hurried.

STANISLAUS.—Crops still doing well inside canal district, but outside no returns need be looked for.

FRESNO.—Grape vines sprouting rapidly. Good supply of water in ditches. Cutting first alfalfa crop. Vineyardists report presence of thrips, and prospects that the pests will do great damage.

KINGS.—No grain. Apricots and prunes failing off badly because of too warm weather. Pears doing finely.

TULARE.—Dry and warm. Ditches running full for irrigation. Blighting citrus trees.

KERN.—Some grain may be harvested, but will be a short crop from a very small area. Fruit crop will likely be very light.

SONOMA.—Late sown grain will prove a short crop unless rain soon comes. Vineyards making good growth. Planting corn; but ground too dry to bring it up without rain. Haying will commence soon.

NAPA.—Hay and grain good. Cherries and peaches good; apricots few; fruit yield generally good.

ALAMEDA.—Hay and grain turning rapidly; yield will be very light.

LAKE.—Outlook not good. Hay and grain on summer fallow or very early winter plowing will yield a good crop, but late sown except on very best land will amount to nothing. Second cultivation in orchards and vineyards only possible where the first was done early. Feed drying fast; prunes very good; grapes well started.

SAN MATEO.—Hay and grain poor; grass drying; barley heading out; pears and apples look well.

SANTA CLARA.—Grain and feed turning dry.

SANTA CRUZ.—Need of rain sadly felt. Pumping plants running day and night to irrigate orchards. Hay and grain will not mature without rain soon; farmers have given up expecting any rain this year.

MONTEREY.—Poor prospects for any crops, excepting possibly a little hay near foothills.

SAN LUIS OBISPO.—Pasture completely dried up. Cattle shipments continue. No change in grain. Fair prospects of fruit crop.

VENTURA.—Poor prospects for barley. Oranges and lemons turning out far better than expected. Irrigated lands will produce fair crop of apricots.

LOS ANGELES.—(Bassett)—Grain crop will be almost an entire failure; some hay will be made. (Duarte)—Hay and grain almost total failure; deciduous fruit crop will be poor. (Los Angeles)—Feed drying up fast; fruit looking good; cherries of all kinds looking well. (Palmdale)—Continued drouth. No prospects for grain. (Pomona)—Deciduous fruits doing as well as could be expected. (San Fernando)—Hay and grain a failure; stock suffering for feed.

SAN BERNARDINO.—Too late for rain to benefit grass much. Valleys looking badly. Fair peach and small apricot crop.

RIVERSIDE.—Hot and dry. Orange movement exceeds equipment to handle it. Hay and grain situation better.

ORANGE.—Prospects for hay and grain poor; fruit trees looking well.

SAN DIEGO.—Crop conditions unchanged.

EUREKA SUMMARY.—Night fogs and warmer weather during days have counteracted, to some extent, deficient rainfall. Crops are doing well.

LOS ANGELES SUMMARY.—Too soon to report effect of hot wave at close of week, but it will probably still further reduce crop of fruit. Sugar beets injured by hot, dry winds.

Early Fruits and Vegetables at Vacaville.

TO THE EDITOR:—The first box of cherries was shipped from Vacaville on April 15th—eleven days ahead of last year—by Maury Robinson, son of Dr. Robinson, by express to Earl Fruit Co., Chicago. They were Purple Guignes, and sold for \$10, netting him \$9.40. The next day he shipped two more boxes. These were followed on the 17th by a box shipped to Chicago by Pinkham & McKevitt. These were followed by sundry shippers to Chicago, New Orleans, New York, St. Paul and Omaha by twenty-four boxes on the 18th; thirty-nine boxes on the 19th; thirty-two boxes on the 20th; and sixty boxes to-day. All of them are of the Purple Guigne variety. At the beginning of the season for the first ten days last year they had \$7.50 a box in Chicago, then began to drop down. The first box to San Francisco from Vacaville was shipped on the 18th.

Vacaville seems to be holding its reputation. S. Goodman & Co. shipped two sacks of green peas to San Francisco on March 14th, and to-morrow Hartley Bros. will ship the first green string beans from here.

F.

Vacaville, April 21st.

AGRICULTURAL REVIEW.

CALIFORNIA.

Los Angeles.

THE SEARCH FOR PASTURAGE.—Owing to the drought, the stockmen of central and southern California are leasing swamp and overflowed lands in the river bottoms, with the hope of securing more pasture later in the season than they can hope for in elevated sections. The average rental paid is 50 cents an acre, although for some choice pieces it is reported that \$3 an acre has been paid. Even land at present under water has been leased, as in the case of Venice Island, on the San Joaquin. The single firm of Miller & Lux has leased no less than 30,000 acres. Sheep men are trying to find pasture in the mountains.—Los Angeles Express.

THE ORANGE SUPPLY.—There is still quite a large quantity of oranges not yet shipped in southern California, although the season is far advanced. Prices for first-class fruit have risen lately and shipments are now going forward more briskly. The Covina packing houses have been closed for a couple of weeks. Covina has shipped up to date 537 carloads of oranges. A number of cars of Valencia and Mediterranean Sweets will be shipped when the packing houses reopen. According to the *Ventura Signal*, the Blanchard packing house at Santa Paula is now running full blast. A large force is prepared picking and preparing oranges for shipment. About seven carloads per week are shipped. The crop this year is estimated at eighty carloads, of about 336 boxes each. About 100 persons are now regularly employed in the various departments. The orange crop will be heavier than last year.—Los Angeles Times.

Mariposa.

NO GRAZING IN YOSEMITE.—Somehow the impression has gotten abroad that the Yosemite National Park is to be thrown open to sheep and cattle this year. It is a mistake. In response to a petition from the Supervisors of Stanislaus county, the Secretary of the Interior, under date of March 31st, said: "The petition of yourselves and other residents of Stanislaus county has been received, praying that in view of the drought existing in southern California and the lack of grazing grounds for stock, that the Yosemite National Park be thrown open for the grazing of horses, cattle and sheep, in the lands embraced therein, during the summer of this year. In response thereto I have to state that similar applications have been presented in previous years involving substantially the same plea for relief, but they have been uniformly denied. It is, therefore, not deemed advisable to grant the privilege desired in this instance. To permit the occupancy of these lands for the purpose desired would be in direct violation of the regulations prescribed for the government of said parks, as well as of the Act of Congress approved October 21, 1890, under which said regulations were promulgated and the lands set aside as a park and forest reservation."

Monterey.

HEMP INSTEAD OF BEETS.—Some of the farmers, owing to the dry season, will plant hemp in the Salinas valley this year instead of beets. The regular time for planting is between March and the first of May and the crop matures in October. Several prominent ranchers have already sown some of the seed. W. H. Hart of San Francisco, owning land in this county and being a great advocate of the hemp industry, has sent seed to several of the farmers to experiment with, besides shipping quantities to F. W. Thompson, who will plant some of Mr. Hart's land near Agenda this week. To get the best results the land is thoroughly plowed and harrowed, seed planted 2½ inches deep in hills 6 inches apart, five seeds to the hill. Hemp yields about six bushels of seed to the acre.—Salinas Democrat.

Napa.

There will be no fair at Napa this year.

Orange.

WALNUT OIL.—The George Hinds Co. of Placentia has placed on exhibition at the Chamber of Commerce in Los Angeles a sample of oil made from walnuts. The *Fullerton Tribune* says: "Mr. Hinds says that so far they have tried only small experiments in making this oil, but that some time it will be a great industry. They took ten pounds of kernels from twenty pounds of nuts. From these, in about an hour, four and one-half pounds of oil was obtained. The oil is similar in appearance to olive oil, has a sweet, nutty flavor, and can be used for the same purpose as olive oil."

FRUIT OUTLOOK.—The *Anaheim Gazette* says: "Carefully gathered reports from different precincts in Orange county indicate that there will be from 30 to 90 per cent of a fruit crop. There are very few trees in the district that will not give some sort of yield. Apricots, especially the varieties that blossomed earliest, have been most affected, as well as a few varieties of peaches. Prune trees are blooming heavily, and if no later injury intervenes that crop will be large, and there will be plenty of plums, apples and pears."

San Bernardino.

BEET CROP OUTLOOK.—Despite adverse conditions, there yet promises to be a partial beet crop. There had been planted up to Saturday on the Chino ranch 3244 acres. Of this there are 2000 acres on the lower black land, which is looking very well. The plants are growing thriftily, and, unless something yet happens, will produce a crop. The balance, planted mostly on sandy land, is not of much value, especially since the wind and hot weather of last week. Of the acreage planted, there is at present 411 acres of good stand. There are something over 1000 acres on which it is yet safe to plant, but planting will all be completed next week. Supt. Rupp expects to have about 4500 acres planted for the season. Thinning is just commencing. A small acreage is being irrigated here, and this week the land company started pumps in two of the wells just north of the factory grounds, from which the water is being used west of the factory. It is hoped to continue using this water, if not on beet fields later, then on some kind of forage for stock feed.—Chino Champion.

PROTEST AGAINST SHEEP.—The supervisors appear to be in favor of opening the forest reservation, on the north of here, to the pasturage of cattle and sheep. If this is done there might as well be no reservation. The cattle are not so bad, but if sheep are pastured there to any great extent the damage would be great. It is a well-known fact that if the brush and undergrowth is destroyed the value of the mountains as a storage reservoir is largely destroyed, and it doesn't require a very wise prophet to foresee what will be the result if sheep are pastured on these mountains. Not only do sheep destroy every vestige of undergrowth, but we know from past experience that sheep herders are the most prolific cause of mountain fires, and therein lies the greatest danger. The San Bernardino forest reservation is too essential to the conservation of irrigating water for this great valley to take any chances by throwing this reservation open for pasture. San Bernardino county has gotten beyond the pasture stage, anyway. The time was when large areas were given up to sheep and cattle ranges. In the early days this was all right, but now the county is more thickly settled and the sheep range must give place to more important horticultural industry. And, accordingly, our chief care must be the conservation of water for irrigating purposes. If this is incompatible with the sheep industry, then the sheep must go.—Colton News.

San Joaquin.

NOT ALL A FAILURE.—Speaking of the crop outlook in this

country a gentleman who has considerable opportunity to learn of the condition of grain in various parts of the country remarked to a *Mail* reporter. "Cy. Moreing stated day before yesterday that he had on the Richard Smith ranch 800 acres which he had irrigated, and of which there promised to be a heavy crop. He also had about the same amount on the Moss tract, which was likewise irrigated and promised equally well. I was also talking with Sam Miller's son, who has 320 acres on the Sargent tract. I saw him within the last three days, and he said: 'I am in a quandary whether to cut for hay or let it come as harley, for the simple reason that I know it will produce three tons of harley hay to the acre. It looks magnificent.' Then down on Ryer Island there is a good crop. A gentleman who went down there a few days ago to take a look at the grain informed me that it looked 'first class,' to use his own words—especially the volunteer located on what is called the low part of the island. 'Now,' continued the *Mail's* informant, 'I have not tried to pick this up, but have merely jotted it down in my memory as I ran up against it. And the information was volunteered to me—not drawn out. I have seen samples of grain from the neighborhood of Valley Spring which were thirty inches high, and I am informed that there are a great many acres of very fine grain there. Nearly all who had a fair prospect for a crop three weeks ago say that it looks better now than it did then. The grain is evidently receiving a great deal of nourishment from the cool trade winds we are getting now and from the heavy dews. There is a large class of farmers who feel much better than they did three weeks ago. They are satisfied now that there will be something besides seed and feed in this county. The trade winds have commenced, and if this kind of weather continues, with heavy dews, wheat that has partly advanced and is heading out—as a great deal of it is doing—will mature. The nourishment appears to come from the air and the dew, and after the grain is in the head the head fills out from the sap that is in the stock of the wheat. I wish I had kept the report that was given to me by a party who inspected Ryer Island, Grand Island, the Sargent tract and those islands down here west of town. He figured out many acres would be cut and the approximate yield. I do not recall the number of acres, but it was many thousand. Miller & Matthews, southwest of the County Hospital grounds, have a good crop, and there is quite a big stretch of low-lying ground in that region which will give a good yield. Monday or Tuesday I saw Charles Needham, who lives three or four miles above Bellota. He said he had never seen the crop prospects look better there, and added: 'I was surprised coming from my place down to Stockton to notice the good condition of the crops until I struck the black land. There is going to be a great deal of grain raised on all those low gravel hills. They look much better than I ever have seen them before. J. C. Smith, said the *Mail's* informant, in conclusion, has 1200 acres which never looked better. It has been all irrigated, and is in splendid condition.'—Stockton Mail.

San Luis Obispo.

CELERY FARMS.—All the men employed at the new celery farm are experienced celery growers brought here for the purpose and no others will be employed until the transplanting and packing seasons arrive. It is the policy of the company to mature their crop just when the Eastern celery is cleaned out of the market, hence planting will not commence until about the first of June. When that time arrives any one who knows how to put a plant into the ground can expect to get a job for then they will want to rush the work. Women and children can be largely employed in setting out the young plants. The next busy season will come with the harvest when whole train loads of cars will be loaded. The packing of the celery will require much help and we understand that girls really make the most expert packers and for this reason as many girls as can be found will be employed.—Arroyo Grande Herald.

Santa Clara.

SAN MARTIN RANCH SOLD.—The San Martin Rancho, in this county, lying generally between San Jose and Gilroy, and consisting of numerous parcels making a whole of 2480.7 acres, has been bought in at foreclosure sale in San Francisco, held in Easton, Eldridge & Co.'s offices, by the San Francisco Savings Union for \$158,000. The land was originally bought from Daniel Murphy by C. H. Phillips, E. B. Pond and H. C. Campbell, as trustees of the San Francisco Savings Union, held the property in trust on a loan, and the interest and principal of which had amounted to \$160,100.—Gilroy Advocate.

THINNING APRICOTS AND PEACHES.—Some of our orchardists have commenced the thinning of apricots and peaches, which in some localities promise to be a good crop. The report in regard to prunes seems to be somewhat conflicting. While some claim they have a full crop, many report a light crop, especially on older trees. The general opinion is that the crop will be light, and the price high, so that the output of our orchards will probably be up to an average. Those who have a good crop of apricots will undoubtedly reap a golden harvest. Those who are in a position to know seem to think that a good quality of apricots for canning will bring at least \$60 per ton.—Campbell letter.

THE FRUIT-GROWING INDUSTRY.—No industry can long command profits unless it can engineer a monopoly. But we believe that, on the whole, there is no more prosperous agricultural population in the world than the fruit growers of California, and especially of the Santa Clara valley. Even this dry season, while the grazing and grain-growing sections are almost in despair of the immediate future, the orchardists of Santa Clara are likely to suffer merely a partial loss of two or three of their less important crops, while the main dependence of the valley—prunes—promise to be an excellent crop. Besides, it is likely that for what we have to sell this year we shall get good prices. It is well for the fruit growers to be always reaching out for new and better markets and striving to obtain better conditions of transportation, handling, etc. But the too prevalent habit of looking at the black side of things does nothing but harm to any industry. The domestic market for fruit remains to be developed, the foreign market has only just been opened and holds the most promising prospects. All that our fruit growers need is open markets, the right to buy to the best advantage and an intelligent and vigorous business management to keep them what they now are—the most prosperous of all our rural people.—San Jose Herald.

Santa Cruz.

PAJARO VALLEY FRUIT NOTES.—The prune crop is going to be spotted in the hill districts. * * * Strawberry shipments will not be of much size until next month. * * * Some sales of orchards have been made during the week, but packers are in no rush. * * * The promise for a big walnut crop at the Rider Mountain orchard is better this season than it was last year; and other fruit promises equally well. * * * W. H. Bowman's big cherry orchard at Corralitos promises to make up in yield this season for its failure last year. The trees are heavily loaded. His apricot trees are also heavy with fruit and thinning has to be practiced. * * * Green Valley is going to have more apricots than was estimated after the frosts. J. A. McCune will have to do heavy thinning; so will J. W. Watters (whose place was included in the list of orchards badly injured by frost); and so will others in Green Valley. This choice apricot district is going to market lots of 'cots.—Watsonville Pajaronian.

Solano.

CATTLE MOVED NORTH.—Miller & Lux, who rented the Hastings ranch, near Maine Prairie, several days ago, have

already shipped 3000 head of young stock—yearlings and two-year-olds—from their large range in Kern county and will add another 1000 to this number within the next few days. The stock reached Suisun in a poor and weakened condition and showed the effects of the shortage of feed in the southern county. Taking into consideration the starved condition of the cattle, their shipment was attended with remarkably good luck, the mortality among them being only ten. Samuel Flint, one of the superintendents, informed a *Republican* representative that it is not expected to get the stock, shipped to Suisun, in a marketable condition. If sufficient feed can be found here to sustain life in them until next winter's rains set in, the owners will be satisfied. It is doubtful whether the 16,000 acres on the Hastings tract will carry the stock for more than three or four months.—Solano Republican.

Sonoma.

IRRIGATION ENTERPRISE.—Fred D. Spaulding will irrigate his Embarcadero ranch this season from the waters of Sonoma creek. The water will be raised and deposited into a main ditch with a centrifugal pump and engine. The Spaulding ranch is considered one of the finest potato and small vegetable farms in the county and immense crops have been grown on the soil, which is a deep sandy loam, in years past without irrigation. This season, with the aid of irrigation ditches, a marvelous crop is anticipated. The wonder is that the waters of Sonoma creek, which flow through the center of the valley from Glen Ellen to Embarcadero, have not long since been utilized for irrigating small fruits and vegetables. There is always a plentiful flow of water in that stream the year round, and there are many small farms along its banks that could be made to pay immense profits.—Sonoma Index-Tribune.

Stanislaus.

IRRIGATION FOR WHEAT.—From a well-posted and well-known farmer, who has irrigable and non-irrigable land on the west side of the San Joaquin river, says the *Stanislaus News*, we learn that he considers water a good investment on wheat land, as well as for fruit and alfalfa. He has experimented with irrigated lands for cereals, and he claims that the result is satisfactory, whether there is a good fall of rain or a scarcity. His method is to give the land a good flooding in the early fall, and then plow it as soon as the land is dry enough. This gives the grain a good moist rooting and a very good start, whether the rains come in an opportune time or not. He further claims that a sack extra to the acre would pay the cost of irrigation, and the crop is always that much in excess and generally more. Irrigation also guarantees a good crop, whether it is a dry year or not, so that he is never uneasy about a rainfall at the time that most other farmers are solicitous. He has flooded his wheat below the Miller & Lux canal every fall, and each season the same good results have been obtained. Our West Side friend is surprised at the antipathy evinced by some on this side of the county, and he thinks that the farmers here are standing in the way of their own prosperity. Our West Side farmer devotes a good deal of his land below the canal to other industries as well, but farms a considerable to wheat. The present season is a dry one on that side of the river, but he will have a good crop on the land he irrigates, while, like his neighbors, the land above the canal will not be productive to grain this season.

Tehama.

THE JACKRABBIT.—Female jackrabbits breed every six weeks of the year, says an exchange, excepting the months of October, November and December. Their litter consists of from five to seven, so the killing of from 5000 to 7000 jackrabbits each year in the county, as was recently the case in Tulare, does not by any means read the vicinity of the pest, for the following year they will be as plentiful as ever. Five jackrabbits will consume as much food as one sheep, so it is no wonder that the farmers want to get rid of the rabbits. This being the case, there is no necessity for any particular law against coursing—in fact the sport should receive every possible encouragement, for it keeps down the rabbit pest, which every year cost the farmers of the State hundreds of thousands of dollars.—Red Bluff People's Cause.

UTAH.

LARGE DEAL IN CATTLE.—A telegram from Salt Lake reports that all the cattle on the great Crocker ranch at Promontory, Utah, some 8000 head—had been sold for \$200,000. An agent of the Crocker estate in San Francisco, speaking of this transaction on Monday, said: "The sale is not significant. The Crockers are not going out of the business and will not dispose of the Promontory ranch. If some arrangement is effected with the quarantine authorities by which we can send cattle from here to Utah, we will in all probability restock the Promontory ranch, where feed is plentiful, with cattle from California, where feed is scarce."

Must Stop Shipping Wormy Apples.

TO THE EDITOR:—I want to call special attention of all growers and shippers of apples and pears to the action of the late convention of horticulturists with regard to the definite stopping of the suicidal traffic in wormy fruit. I say "suicidal" advisedly, for the grower, in shipping such stuff, kills the sale of his good fruit and obtains for the wormy trash a price (if he gets anything) that barely pays the cost of handling, while the disgusting wormy stuff not only glutts the market, but discourages buyers from paying a decent figure for better grades. So that growers actually lose money in the long run by dumping this hog-feed on the market.

A resolution was passed in the convention calling on the State Board of Horticulture to instruct their quarantine officer to cause such fruit to be destroyed, as he is by law empowered. The President of the Board, Mr. Ellwood Cooper, agrees so to do, and I write this that all may be forewarned that any attempt to renew the mischievous practices of the past season will not be tolerated, but will end disastrously.

There is now ample time for such successive sprayings with Paris green as shall insure all growers a fair percentage of sound fruit. If growers decline to take precautionary measures they can invest in cider presses and turn their bug-juice into cider or vinegar; or they can raise sufficient pigs to convert the waste into good sound pork that calls for good sound apples to make the accompanying "apple-sass."

As the resolution has not been published, I will ask Mr. B. M. Lelong, through your columns, to have the same published. EDWARD BERWICK.

Pacific Grove, April 25th, '98.

HORTICULTURE.

The Persian Walnut in California.

By F. E. KELLOGG at the University Farmers' Institute at Escondido.

The Product.—The towns of Goleta and Carpinteria in Santa Barbara county, Saticoy in Ventura county, Rivera, Whittier, Los Nietos and El Monte in Los Angeles county, and Capistrano, Santa Ana, Tustin, Orange, Fullerton and Anaheim in Orange county, have already gained a wide reputation for both the quantity and quality of their walnuts produced. Their combined product for 1897 aggregates more than four thousand one hundred and forty (4140) tons.

The industry will assume gigantic proportions when the thousands of acres of young orchards, not yet in bearing, come into their full fruitage.

Although the quantity produced is so rapidly increasing, there seems to be but little danger of immediate overproduction, or that the profitability of the industry, if wisely managed, will seriously diminish for many years to come.

Fitness of California.—In the first place, it has not been demonstrated that any State in the Union but California can produce Persian walnuts successfully. From personal experiments I know that central Illinois cannot produce them, and I am of the opinion that nowhere on this continent can there be a quantity produced that will compare with the California nut. And even in California but few localities possess the proper climatic requirements. The interior valleys are too hot and dry in summer and too frosty in winter, while much of the coast region is too raw and windy. It is doubtful if any part of California except the four counties now engaged in the business will ever become celebrated for this product. And even in southern California the acreage adapted to the cultivation of walnuts is exceedingly limited. You may find a hundred acres adapted to the orange, the lemon or the olive, to where you may find one adapted to the walnut. Hence the output must always remain comparatively limited.

Consumption in the United States.—In the second place, the demand is likely to remain greater than the supply. In the year 1897 there were imported into this country of walnuts and filberts (I am unable to ascertain the exact proportion of each), including shelled and unshelled, more than 7158 tons, as reported by the United States Treasury Department, which you will observe is a quantity very far in excess of the California product. By seeing to it that these foreign nuts remain at home in the future the question of demand, for the time being at least, will be fully solved, and with the rapid increase in the population of all the States east of us the demand ought to fully keep pace with the increase of our supply.

The ample protective tariff of 3 cents per pound, now imposed upon the foreign nuts, makes it possible for us to exclude them until our own product is consumed.

Varieties.—Those parts of southern California where the soil is deep and rich, which are sheltered by the mountains from the hot winds of the interior, and which are moistened by occasional warm summer fogs, combine the most perfect conditions for the production of walnuts. Three principal varieties are grown, which are known respectively as hard shell, paper shell and soft shell.

The hard shell requires the least skill in preparing for the market, as it can be washed and bleached to almost any degree without damaging the kernel, and with proper handling can be made very perfect in appearance, and is, withal, a very desirable nut. In quantity produced it has thus far taken the lead, but it is destined in the near future to lose this distinction.

The paper shell is undoubtedly the sweetest and most delicious of the three, and the most desirable for confectionery purposes, but it is inferior in size and appearance, is the least fruitful and the most difficult to harvest and prepare for the market.

The soft shell, which is probably a cross between the other two, is in some respects superior to either. The tree is thriftier, bears younger, and produces more abundantly. The nut, while more palatable than the hard shell, and lacking but little in the delicacy of flavor possessed by the paper shell, is larger and handsomer than either, ripens earlier, is more easily harvested, and commands the highest price.

Culture.—The cultivation of a walnut orchard simply requires that the surface of the ground be kept pulverized and free from weeds, and the only pruning to be done is to remove the branches which interfere with the cultivating.

The harvesting is simple and inexpensive. The only points in the preparation of the nuts for the market requiring very careful attention are the washing and especially the sulphuring of paper shells and soft shells, there being considerable danger of oversulphuring, whereby the flavor and keeping qualities are damaged. The sulphuring is only done to improve the appearance and had much better be dispensed with. The producer does not

sulphur what he retains for his own use, and we hope the Eastern buyer will soon exercise the same good judgment.

In planting a walnut orchard two-year-old nursery trees are preferred, and they are generally planted 40 feet apart. They come into profitable bearing in from six to eight years after planting.

In the selection of the soil be sure that there is no hardpan, that the soil is free from alkali, that the drainage is good, and that there is surface water at from 10 to 20 feet in the dry season of the year.

While no fabulous results are to be expected, a good soft shell walnut orchard in its prime, say anywhere from ten to twenty-five year old, is, to say the least, valuable property. On an average, under favorable conditions, it will produce 2000 pounds to the acre per annum, and ought to net the owner \$100 per acre.

Let us as producers appreciate the peculiar conditions surrounding this industry, and by timely and wisely directed co-operation seek to preserve it from the fate to which competition among ourselves has driven almost every other product of the farm.

ARBORICULTURE.

Suggestions on Tree Planting.

J. H. Barber, foreman of the University Forestry Station at Santa Monica, gives the *Outlook* some suggestions on tree planting which may be helpful to some RURAL readers. The time for planting deciduous trees has passed for this year, except in the mountain counties, but the points on handling evergreens are still applicable, if water can be had to carry the tree in this trying year.

Importance of Right Planting.—There is no epoch in the history of a tree more important than that which sees it transplanted from the nursery grounds, and set out in the place it is to occupy permanently. The method of its planting in this permanent situation will largely determine its future development. "As the twig is bent, the tree is inclined," says the old saw, and just as truly may it be said that as the tree is planted, so will it grow. If planted correctly, and subsequently given ordinary care, it will develop rapidly and symmetrically into its natural grace of form and foliage; but if set into the ground in such a fashion that it finds difficulty in establishing itself in the new soil and surroundings, no amount of after care will avail to overcome completely the handicap thus placed upon it.

In planting a tree, four main points are to be considered—the time of planting, the condition of the tree, the condition of the soil in which it is to be placed, and, finally, the manner of setting it in the ground.

Time for Transplanting.—The time, of course, is the first consideration, for upon it everything else depends. Deciduous trees, that is, those which drop their leaves in winter, may be set out at any time during their dormant period when the ground is in condition, which, in this locality, means any time during the rainy season, provided it is not too late. Trees of this kind set out early usually succeed best. If, for some reason, planting must be deferred until late in the spring, be sure that the trees are still dormant—that is to say, have not begun to put forth their leaves.

Evergreens should be planted later than deciduous trees. The warm days of later spring, when the sap is beginning to flow freely and the trees are commencing a new growing period, are the best time to move evergreens. Cloudy weather is better than clear weather for tree planting, and the best time of all is just before a rain.

Soils and Tree Holes.—Now, as to the ground. The soil should be of good quality, so that the young tree may find plenty of food to support the vigorous growth we expect it to make. If the soil is naturally poor or has been exhausted by previous tree growth, it should be enriched by a judicious application of leaf mold or well-rotted stable manure. If neither can be had conveniently, simply remove the poor soil and replace it with fresh surface soil from some other part of the lot, or, better, from an adjacent field. On no account use fresh stable manure; it will seriously injure the roots and possibly ruin the tree. Dig the hole both wide and deep enough. More mistakes are made in this particular than in any other. It is scarcely possible to dig the hole too large, but for small trees a hole 3 feet in diameter and at least 2 feet deep will suffice. For larger trees the general rule should be to make the hole large enough to accommodate all the roots when fully spread out, and also to provide for a good space of finely pulverized soil all around outside and beneath the roots, into which they may readily push their new growth, and in which they may find plant food in available form. It should be remembered that trees cannot feed on clods, any more than we can digest our food in chunks. Having dug the hole of proper size, loosen up the soil at the bottom of it, then thoroughly pulverize the dirt taken out, put it

back into the hole, adding the manure, if any is necessary, and thoroughly mixing all together.

Handling the Tree.—The place is now prepared, and we may turn our attention to the tree which is to occupy it. In the first place, see that it is a good, strong, healthy young tree, straight and well-grown. If a deciduous tree, the roots will probably be bare, but they should not be dry. If they have been allowed to dry out, or are moldy from poor packing, soak them in warm water for an hour or two before planting. An evergreen will have a ball of soil packed around the roots, which should be kept damp, and should not be disturbed until the tree is set in the ground, when it may be broken gently, in order to spread out the roots. With a sharp knife cut off the ends of all broken or bruised roots, making a clean cut in every case. This will prevent rotting, and enable the wounds to heal quickly. Take out of the hole already prepared sufficient soil to leave ample room for the roots of the tree. Set the tree in the hole upright, and about an inch lower in the ground than it stood in the nursery. Hold the tree straight with one hand, and with the other spread out the roots carefully, working in the loose soil among them. Fill in the dirt gradually, working it among the roots, and, when about two-thirds of it is in, press it down firmly with hands and feet all around the tree. Fill in the balance more loosely, and the tree is planted. Deciduous trees may now be pruned according to the form in which they are to be grown. Evergreens, as a rule, should not be pruned, except to the extent of removing the superfluous branches. Water the tree to settle the dirt closely around the roots, stake it to hold it firmly in place and prevent it from becoming loosened in the soil by the wind, cover the surface around the tree with a mulch of well-rotted stable manure, straw, leaves or other available substance, and your tree is correctly planted, with every condition necessary to healthy and vigorous growth.

ENTOMOLOGICAL.

Beneficial Insects.

By F. G. HAVENS of Riverside at the Fruit Growers' Convention.

The study of insects and their habits is certainly one of great importance and interest, for it is necessary to know something of their structure and habits before we can determine whether they are our friends or our foes. Also, such a knowledge is necessary before we can determine how to proceed against such as are our enemies, or how to foster and encourage such as are our friends. It has been wisely said that if our eyes magnified objects to the extent that the eyes of some insects do, and the extent of our vision was not lessened, we would see, going on all around us, a desperate war of extermination in the insect world, compared to which, in point of carnage, the greatest battles of history were as skirmishes.

Any one of a great many of our common insects would ruin our fruit industry if it wasn't for the warfare waged on them by their enemies, who, by the same token, are our good friends. Even the aphides or plant lice would become so numerous in a short time as to sap the young growth on our trees, and so beset them as to soon blight the trees, were it not for our friends, the ladybirds, syrphus flies, etc., who take such excellent care of them for us that we seldom have to give them a moment's attention.

California Work.—While such facts as the above were well known to the scientists many years ago, it seems to have remained for the people of California to take practical cognizance of the fact that nature has supplied a system of checks and counter-checks throughout animate nature, and that therefore all our insect pests were such only because their natural enemies had not been introduced with them. If I mistake not, this matter received its first public discussion here in Riverside at a Fruit Growers' Convention in 1887. The subsequent agitation of the subject, the action of our Legislatures in giving money for the purpose of conducting a search for the natural enemies of our scale insects, the work of Mr. Albert Koebele in such search, the great success attendant upon such introduction of *Vedalia cardinalis* and the various rhizobii, are matters of too well known renown to be again detailed to you. The important thing to consider in this matter is the standpoint of the fruit grower, which, I can assure you, is the practical one. What the owner of a scale-infested orchard wants to know is, "How can I get rid of these bugs the cheapest way?" And to many of them the item of expense is the all-important one.

Local Experiences.—Perhaps I would not be putting it too strongly to say that almost every community has had a different experience to every other community in the conduct of scale insects, and in methods employed against them. To such an extent is this true that it is impossible to write the history of the rise and fall of the black scale, or to give an ade-

quate idea of the work of the *Rhizobius ventralis*, for instance, in southern California, without making a separate study and investigation, for almost every orange growing locality in this part of the State.

The time that has been at my disposal since I received the request from Mr. Lelong to prepare an essay on beneficial insects, with special reference to the work of the rhizobius in southern California, has been so short that a thorough examination of the facts in each instance was impossible; so I will be compelled to give you only our experience in Riverside, with a few words in regard to what is reported from other places.

The Rhizobius.—Of the wonderful success of the rhizobius in ridding Mr. Cooper's orchard of the black scale of course we are all familiar. The next great success reported was in the olive and orange orchards of Ventura county. This was in 1894 and 1895. Most of the colonizing with rhizobii in the remaining counties of southern California was done during the fall of 1894 and the summer of 1895. There has been a number and variety of reports of results attained from these colonies of rhizobii, and no little disagreement among the observers; but there are several well authenticated cases where these ladybirds have certainly done good work, and no doubt in the cases where failure is said to have taken place a good and sufficient reason could be found why such was the case.

The Black Scale.—But to return to one experience here in Riverside. As early as 1892 the black scale was beginning to show up in some of the older seedling and Mediterranean Sweet orchards, in numbers sufficient to cause some alarm. They steadily increased during 1893 and 1894, and by the beginning of 1895 several thousand acres were pretty badly infested, and smutty oranges and blackened trees were too common to be comfortable. The extent of the damage to the fruit can be very well determined by the quantity that had to be cleaned of the smut before it could be shipped. In 1895 this was fully one-half of the seedling crop and about 20 per cent of the budded fruit. When we consider the actual cost of washing the fruit, say 5 cents a box, and add to that 25 cents a box loss by reason of being made second grade fruit by the washing process, and multiply that by 800 carloads at 300 boxes per car, that had to have that kind of treatment because of the black scale, we can readily figure out the loss inflicted on our orange growers by the pest.

Introduction of Rhizobius.—Well, we all remember the feeling among our fruit growers. For a time the black scale problem far overshadowed all others in the minds of the Horticultural Commissioners; and, again, we observe the variety of methods employed. Some decided to try the rhizobius, but abandoned it after a short time and recommended sprays. The spray manufacturers entered upon a vigorous campaign, and for a time it looked as if the rhizobius would not be given much of a show in most places. However, here in Riverside there wasn't much spraying done for black scale, most of the orchardists preferring to give the ladybirds a trial. The first colonies of rhizobius were distributed in Riverside in October, 1894, but the principal colonizing was done during the summer of 1895, when about 100,000 of the beetles were placed in the worst infested groves by myself. I watched the progress of events as carefully as I could, and during the fall months of 1895 I frequently found considerable quantities of the ladybirds, and also noted a very marked decrease in the black scale. When orange picking time came around again the general remark was, "What has become of the black scale?" "It isn't nearly so bad as last year," etc., and a careful estimate showed that less than 10 cent of the crop had to be washed. A good many of the oranges were brushed, but it was on account of the dry smut from the leaves collecting on the stem end of the oranges, and the brushing simply brightened their appearance without at all injuring their grade or shipping qualities. During the year 1896 I gave the black scale and rhizobius my closest attention. I hunted the trees for rhizobius, and in no case did I find them in any considerable numbers. They certainly were never so thick upon the trees here as they were in Mr. Cooper's orchard or in Mr. Harrold's at Saticoy, when he was supplying us with several thousands a day.

The Disappearance of the Scale.—I also watched the development of the black scale, and did my best to determine the cause of its phenomenal decrease. Early in June I noticed a great many of the scales (which at that time were full grown and full of eggs) seemed to have gotten baked clear through, and the scale, eggs and all were as dry as chips. I made a general examination of the infested groves and found this to be the case in all of them. Then, as the remaining scales hatched out, I made almost daily examinations and notes on their condition. At first they seemed all right and alive, but later—in August and September—I noticed that most of them were either dry and shriveled in appearance or else had black spots on them. A great many of these spots appeared to be bits of smut which had adhered to their bodies. At that time of year the smut had become so dry as to peel off the leaves and twigs, and be powder. I kept up my observations in this

way; every day I would gather a number of leaves from trees badly infested with black scale, and count the scales that were dead and the ones alive, and set down the per cent of each. By November 1st the live ones had decreased to such an extent that I could not find any place where there was to exceed 5 per cent alive. In the meantime it was rare to find any number of rhizobius at all, except on olive trees. The result of this mortality among the black scale was easily noted in the condition of the orange crop of 1897. Very little, if any, washing of oranges was necessary. Some were brushed, but it was as much for dirt as for smut. The trees took on a glossy, thrifty appearance, where two years before they were covered with smut and grime. The worst infested orchards of two years ago are now among the cleanest, and, while the black scale in our valley at the present time is hardly numerous enough in any of the orchards to merit attention, yet it is significant that if it is increasing anywhere it is among the budded orchards, in the younger planted sections. It seems to contradict the assertion so often made, that the hot weather kills it by sometimes thriving best on the top branches and most exposed parts of the trees.

Why Insects Become Pests.—To arrive at definite conclusions as to all the causes which led to the subsidence of the black scale in this valley would require more research and observation than I was able to give to the matter, but I feel safe in saying that our beneficial insects played a prominent part, and that the *Rhizobius ventralis* was a factor. In fact, so well has nature adjusted matters in the insect world that it is only under exceptional circumstances that any of them become pests. Of the many hundred kinds of orchard insects, any one of which would destroy our orchards if not kept down by natural causes, only a few have become serious enough to make artificial remedies necessary; and of these, perhaps all that we now have will ere long become the prey of some beneficial insect or other condition that will render them harmless.

Practically all of our orchard pests are immigrants, and most of them were minor pests in their original habitat, being kept in subjection by insect enemies or climatic conditions; but by being transplanted they escaped from their enemies and were free to multiply in our orchards. Some of these pests have fallen a prey to our native parasitic insects, others have been destroyed by the vedalia, novius, rhizobius, etc., that were so fortunately found by the employees of our State Board of Horticulture, while others of these imported pests are with us as a standing menace to our fruit industry and a source of heavy expense to our people.

Therefore, it seems to me that the logic of the situation demands that we hold up the hands of our State officers in keeping all new pests out of the State, and in their efforts to find beneficial insects in other parts of the world, that, when brought here, will prey upon the pests we now have, let us give them our earnest and undivided support.

Treatment of the Root-Crown Peach Borer.

One of the California fruit districts has had a long tussle with the large grub or borer which works near the ground surface in the peach and some other trees. Many protective measures have been employed and many methods of killing the grub without gouging the bark all to pieces to get him out, which is a sure method but expensive and often very injurious to the tree. The latest proposition to kill the grub in his burrow by using bisulphide of carbon poured on the ground in a channel made around the base of the tree has already been described in the *RURAL*. This treatment has not yet been fully approved, and has a bad name with some because of injury to the tree.

Preventive Measures.—Obviously, the best treatment is to prevent the entrance of the grub to the tree, if this is possible. It is also the time now (or possibly a little earlier) to apply preventives. For the benefit of those readers who have not kept informed on this pest, we take from a bulletin just issued by Prof. John B. Smith, entomologist of the New Jersey Experiment Station, a very comprehensive review of preventive measures, with comments on their efficacy. Prof. Smith denounces the use of tarred paper because of heat absorption and burning of the bark. He objects to boxing or other form of "tree protector," because it helps rather than hinders the insect.

Earth Protection.—The simplest of these is hilling up around the trees a foot or more in early spring, and removing the soil again in early fall. The borers will enter at the top of the mound, and when it is removed in the fall they can be readily found and destroyed. This method is feasible in light soils only, and would apply very well in many of our southern counties. In some localities the objection is also made that this would be all very well if the wind did not blow away the mounds too readily.

A mixture of clay and cow dung made into a paste, with or without Paris green, has been locally used,

and with good results. It stands on an equality with any other mechanical protection.

Poison for the Young Worm.—The "Hale" wash is: Two quarts of soft soap, half a pint of crude carbolic acid and two ounces of Paris green, mixed thoroughly in a bucket of water, to which add lime and clay to make a thin paste. The carbolic acid is relied upon partly as a repellent and partly as a poison in addition to the Paris green.

Soft soap and carbolic acid have been quite frequently employed with good results.

Whitewash, with an addition of salt or glue or whale-oil soap to make it more lasting, is quite often used, and Paris green is not infrequently added.

White-lead paint has been recommended and found useful by some, and declared to be fatal to the trees by others. In two cases that have come to my knowledge where trees were killed, turpentine had been used to thin out the lead, and the death of the trees was chargeable to this fact. With linseed oil the results would probably have been different.

Two Lines of Fighting.—All these applications divide readily into two series; in one the protection is mechanical only, and intended to prevent the deposit of eggs by the moth or the entrance of the larvæ at or near the surface of the ground; in the other, provision is made for killing any larvæ that may try to get into the bark.

Considering all the experiments made this year and all the records that have been published, my conclusion is that newspapers, and hydraulic cement mixed with skim milk, come nearest to filling all the requirements of economy and durability, with the advantage, on the whole, in favor of newspapers on old or medium-sized trees.

The Use of Newspapers.—Newspapers are at least as effective as any other kind of wrapping that I have seen tried, and in actual practice they have lasted well. Whatever the material employed, some borers will start above the protected point and work into the bark, so that examinations must be made at least once each year to prevent all chance of injury.

The papers are cheap and may be accumulated by saving what comes into the house, or bundles of old issues may be purchased at any newspaper office for a few cents per hundred. One paper will do for the largest orchard tree and a half of most of the papers will answer for a three-year-old or younger. The time of application is almost the same for a large as for a small tree, and the paper is soft, clean and easily handled. It offers less chance for slouchy work by the hired man, for a badly put on paper is very readily seen.

Hydraulic Cement.—The hydraulic cement in milk stands next, in my opinion. It is by all odds the most lasting of all the washes that have been recommended, and has stood the test of an unusually trying season in several localities, with complete success.

On small trees it is cheaper than the newspaper, because it can be applied much more rapidly, the amount of material being insignificant. On large trees the paper is cheaper, because the cost of the cement and milk becomes an item and the time of application is longer. There is always here, too, the serious danger that the application will not be thorough. In one case I looked over the cemented trees and found that there were many little open spots and places where the top of the covering was too near the surface to suit my ideas. The larger and rougher the trees, the greater is this source of danger. On small or smooth trees, the wash is excellent and has the advantage over newspapers that it can be easily brought up to protect a much greater part of the trunk.

Protection and Poison.—On the other hand, the trunk above the newspaper may be easily protected by two or three sprayings of Bordeaux mixture or by an application of lime and Paris green or any other of the poisoned washes.

In fact, for trees over three years old I would recommend newspapers, tied on some time in early May, and supplemented by applications of Bordeaux mixture with half the usual quantity of copper and the addition of an ounce of Paris green for every two gallons of the mixture. The applications should begin early and should be made as often as necessary to keep a good covering until the end of August. The paper should be in all cases removed about the beginning of October.

This would be as complete a protection from borer injury as could be hoped for.

On younger trees the cement and milk could be used and the trunks could be protected to, or nearly to, the branches. All washes soluble in water are objectionable because of their liability to become imperfect.

However, while I advise the newspaper and cement, I have no prejudice against other coverings so that they are continuous, complete, and shield the base of the tree two inches below and at least twelve inches above ground from May to October.

The wire netting, while at first sight an ideal protection, is not so satisfactory when all points are considered. It is much more expensive, requires much more time to apply and offers a chance for a young borer to crawl through the meshes.

AGRICULTURAL SCIENCE.

Green Manuring in California.

By J. W. MILLS, Experiment Station, Pomona, before the Farmers' Institute at Escondido.

Some of our fruit growers who have heavy soil object to planting green manuring crops in their orchards, because such ground takes up water slowly and parts with it rapidly unless it is kept well tilled. Heavy land would be benefited by green manuring as much if not more than any other class. Green crops plowed under add humus to the soil. Humus possesses the power of retaining moisture to a remarkable extent, and holds in available condition a very large percentage of the scarce and necessary ingredients of the soil that go to make well proportioned crops. Humus contains from 1 to 5 per cent of the phosphoric acid of the average soil.

Barnyard manure is a valuable source of humus where it is inconvenient to raise a green crop, but still it has its objections.

Loss of Nitrogen.—At the Grignon Experiment Station in France large glazed casks were placed on tripods in a ditch. The tops of the casks were on a level with the surrounding field so as to obtain, as near as possible, natural conditions. Vessels were placed underneath to catch the drainage water from the casks. Parts of the casks were filled with earth from a field that had been fertilized with barnyard manure, and part were filled with earth naturally rich in humus. During one year the soil fertilized with barnyard manure lost 51.7 grains of nitrogen, while the soil rich in humus lost but 17.6 grains of nitrogen. This seems to render conditional the old adage, "The true foundation of successful agriculture is the manure pile."

In heavily manured soil one-seventh to one-fourth of the nitrogen that was made available was washed out in one year. If the nitrogen from this source is so easily lost, we must look for something additional with which to supply our soil with humus and nitrogen. Nitrogen from inorganic source is as easily lost, and mineral manures never restore the original productiveness of soil. It produces no humus and the loss of humus from your soil means its loss of power to retain moisture and nitrogen, and the loss of power to assimilate phosphoric acid and potash and make it available to plant growth.

What Is Humus?—If humus is such a desirable thing, let us look into the subject and see how it gets in the soil through nature. You have seen land that has been given an abundant water supply by some new agency. It produces rank growths of vegetation that fall down year after year. It is not long until the soil takes on a dark color, and year after year the vegetation becomes ranker and more luxuriant. Some of our richest lands are formed in this way. What, then, can we do to our cultivated land that we may give it this life-giving element, humus? Nature lets the weeds grow, but in most cases we fight them. It has been demonstrated that weeds not only supply humus, but during their life they help to retain in the soil that most evasive and subtle element, nitrogen.

At the experiment station referred to above different casks were filled with the same kind of soil. In part of them quick-growing plants, such as mustard and rape, were grown, while in other casks nothing was allowed to grow. It was found that the soil in which nothing grew lost five times as much nitrogen as that in which the plants were growing. The catch plants save the nitrogen in the soil in two ways: First, by using up the nitrogen almost as fast as it is made available, and, second, by taking up a large part of the water and evaporating it through their leaves, instead of letting it pass through the soil and take the nitrogen with it.

Gain of Nitrogen.—At the Grignon station a plot of ground that had an average of 2.04 per cent of nitrogen to begin with had beets and corn grown on it for three years. At the end of that time the soil contained but 1.46 per cent of nitrogen. During the next three years sainfoin (*Onohrychis sativa*) was grown, at the end of which time the soil contained 1.50 per cent of nitrogen. For the next three years sainfoin and grass were grown on the plot, when the nitrogen per cent was raised to 1.65. During the next four years grass was allowed to grow on it. At the end of this time the soil contained 1.81 per cent of nitrogen. The marked increase in nitrogen after the grass had grown was no doubt due to the presence of the innumerable roots that literally filled the soil and took up the nitrogen as fast as it became available; but we do not know what takes place in the soil. It is nature's dark laboratory, into which no one can see.

At the Delaware Experiment Station one dollar's worth of crimson clover seed sown and plowed under at the right time added twenty-four bushels of corn per acre more than an unfertilized plot of equal area, while one dollar's worth of nitrate of soda added but six bushels of corn per acre. One hundred and sixty pounds of nitrogen that is put into the soil by legumes is equal to about 1000 pounds of nitrate of soda. At the same station a plot of timothy was plowed under and land sown to rye. It produced grain at the rate of eighteen bushels for

four acres. On an equal area cowpeas were plowed under and rye sown that produced ninety-three bushels per four acres, an increase of a little over 500 per cent. At Luitpitz, in Saxony, the roots of rye and potatoes penetrated to a depth of 3 feet and more when sown on ground that had previously grown a crop of lupines, while on an adjoining piece of ground that had been fertilized with farmyard manure, but had never produced a crop of lupines, the roots penetrated but 16 and 24 inches. The plot fertilized with lupines produced 50 per cent more potatoes than the plot fertilized with stable manure, and the tubers were more shapely.

Growth Required in California.—What kinds of green manuring crops can we plant in southern California? In the Eastern States and parts of Europe, green crops can be grown during the summer, for they have summer rains and do not have to cultivate to retain the moisture as we do in this State. Consequently, we must look for something that will do all of its growing during our coldest seasons. The cowpeas of the Eastern and Southern States and also the velvet bean that has taken the lead in Florida as a green manuring plant will not do for California. They are more sensitive to frost than a tomato vine. We have a number of native legumes that grow throughout our severest frosts. They are divided into two classes as regards their root stems—those that penetrate the soil deeply, such as lupines and sweet clover, and those whose roots branch and feed near the surface, as the true clovers and burr clover. Those having long tap roots and few laterals are valuable for light sandy, dry soils, as they penetrate deeply and are, to a certain extent, drouth resisting. They are valuable also on heavy soils, as the roots decay and leave open channels through which the roots of succeeding crops can penetrate the imperious lower stratum. On either kind of soil they assimilate and bring up the potash and phosphoric acid and leave them within reach of surface feeding plants or the surface roots of deep-rooting plants. The most promising native lupine that we have in this part of the State is *L. micranthus*. It can be found in almost any sandy place. Its roots will ordinarily penetrate two feet or more. Specimens have been dug up at the station whose roots were nearly four feet long. The top has no main central stem, but has innumerable branches coming from the ground. Lupines are a failure on land that has even a limited supply of alkali. The next best deep-rooting legume for alkali land that we know of so far is our yellow sweet clover—*Melilotus Indica*.

Field Peas.—For abundance of herbage, perhaps nothing will surpass the field pea, but it is a shallow rooted plant and has not the advantage of the legume and sweet clover during a drouth, nor has it the advantages enumerated above. The Canada field pea and the blue Prussian are perhaps the two best varieties to plant. The former has proven the most desirable in the East and in California. Yorkshire Hero made the best growth at the southern California station this year, but seed is too expensive.

Native Clovers.—In this part of the State we have several varieties of native clovers that start with the first rains in the fall and make a good growth during the winter season if they receive an ample supply of water. Next to peas for an abundance of herbage, I would recommend lupines with clover. While the former grow erect and send their few roots deep into the earth, the other cover the ground with a dense mat, and their masses of roots fill the surface soil and more completely retain the nitrified or available nitrogen.

Burr clover is, perhaps, the best low-growing legume we have, and land once sowed to it will generally volunteer enough plants to give good crops the following years. The best way to seed land with burr clover is to use manure from flocks of sheep that have been pastured on land on which the plants grow.

When to Plant.—Whichever plant you choose, get the seed in the ground early, as our orchards must be cultivated till late in the summer; the latter part of September or the first of October is as early as we can hope to do it, but this is none too early.

The nitrification of soils or the process of changing to the available from the unavailable form of nitrogen in the soil takes place more actively in the spring. At that time about half of the year's nitrification takes place. After this change it is very easily washed out of the soil, consequently the early winter rains leach out a large part of that which is lost. The larger losses are due to the larger amounts of water which percolate through the soil. When a crop is luxuriant, it evaporates a large quantity of water and the losses by drainage are consequently small; when the crop is sickly, and when its period of growth is short, the losses are very large. To leave the soil barren in autumn is dangerous and exhausting. This is one important reason why a green manuring crop should be started early. Another equally important reason for early planting is to secure as large amount of herbage as possible before the ground dries out in the spring. It is a good idea to plant the seed just after the ground has been irrigated the last time, then furrow out so that it can be irrigated after the crop is up, if necessary.

When to Plow Under.—It is important that this

should be done before the ground dries out in the spring, and it is not safe to wait later than the first part of March in southern California. There should be a good rain just after plowing under, in order to get the best results. In the case of lupines, if not in other crops, it is important to know the proper time to plow under, as is shown from experiments made at the experiment station in Germany. The lupines were plowed under at the times noted in the table below. The plots were of equal size and the soil of the same character. After crops of rye were sown on each plot to determine the actual fertilizing effect of the different varieties and times of plowing under the increase of those not manured was as follows:

| | Pounds. |
|--|---------|
| Yellow lupine when central stalks were in bloom..... | 50 |
| Yellow lupine when lateral stalks were in bloom..... | 230 |
| Yellow lupine when central stalks formed pods..... | 569 |
| Yellow lupine when lateral stalks formed pods..... | 1,101 |
| Blue lupine when central stalks were in bloom..... | 568 |
| Blue lupine when lateral stalks were in bloom..... | 729 |
| Blue lupine when central stalks formed pods..... | 1,149 |
| Blue lupine when lateral stalks formed pods..... | 1,348 |
| White lupine when central stalks were in bloom..... | 130 |
| White lupine when lateral stalks were in bloom..... | 580 |
| White lupine when central stalks formed pods..... | 953 |
| White lupines when lateral stalks formed pods..... | 1,352 |

The conditions that caused these variations seem to lie in the amount of seed pods formed. It seems that that is a point to keep in mind, and is another reason why the crop should be started early in the fall, so as to give the plant time to form an abundance of seed pods. It is also profitable to feed all kinds of those green crops to stock and scatter the manure.

THE DAIRY.

American Butter and Canned Milk in Hongkong.

Mr. Rounseville Wildman of San Francisco was appointed last year U. S. Consul at Hongkong. In the last volume of the Consular Reports he has a letter on dairy supplies at that port in China which conveys much information of interest to California dairy producers.

The butter consumed at Hongkong is imported from Denmark, Australia and France, with small quantities from California. The Danish is the most popular. The average price obtained for butter in this market is 80 cents Mexican (38 cents gold) per pound. Hongkong being a free port, no statistics as to the total quantity imported are obtainable. United States creamery butter—properly prepared and genuine butter—can find a good market here.

American exporters have been laboring under the delusion that anything is good enough for the Asiatic coast, whereas the demand is for the highest grades, and the consumers are willing to pay for them; as per example: People here pay \$1.30 (62 cents gold) a tin for English canned asparagus, when the same firm here (Lane & Crawford) are agents for the finest tinned California asparagus for 55 cents Mexican (26 cents gold), better goods in every way and one third as cheap. When I bought the last tin he had and inquired for more, the salesman replied that I was the only person who had ever tried it, except himself; that he could not even give a tin away, because it was American.

California Butter.—J. C. Goodchild, late manager of the Hongkong Hotel, the largest hotel in the colony, imported last year from Goldberg & Bowen, Fortier & Co., and others of San Francisco, over 1200 pounds of pickled and creamery butter. He placed it on his table and the guests had to eat it. The result was that it was liked, and residents of the city fell into the habit of sending to him for rolls for their private use. He imported it in barrels of 100 rolls, each roll weighing one and three-quarter pounds, and it was laid down in Hongkong for from 26 to 32 cents gold per pound.

Of late fresh Australian butter has been brought here in refrigerators at 55 cents Mexican (26 cents gold) a pound. There are three small dairy farms on the island that are under Government inspection. The cattle are stable fed, and they only pretend to furnish milk, cream and butter to European residents. Altogether, it is estimated that these three farms sell 8000 pounds a year. They charge \$1.60 Mexican (76 cents gold) a pound; so it is decidedly a luxury. Yet it can not always be depended on by those who are able and willing to pay. At present the dairies are closed by the Government on account of hoof and mouth disease among the cattle.

Condensed Milk.—With butter, as with evaporated or canned milk, the demand is rapidly increasing among the Chinese. In regard to the latter, I am in receipt of numerous letters from our manufacturers. The Helvetia Milk Condensing Company of Highland, Ill., after writing me several times, sent a case of forty-eight cans of their cream. I turned it over to the well-known German firm of Lauts, Wagener & Co. They reported to me as follows:

"We may say that it is excellent in every respect. It is, however, not the class of goods in which a regular trade could be built up, the consumption being exceedingly small. What we require for this market is a cheap kind of condensed milk, sweetened and of white color, like the Dutch manufacture, which should not cost more than \$1.80 to \$2 Mexican (85)

to 95 cents gold) per dozen cans laid down here, and which is selling in very important quantities, say 500 cases a month or more."

We tried this cream in our family and before the receipt of the above letter decided that it was one of the cases where the goods were too good for the market. The Chinese believe that condensed milk should be white in color. One of the largest firms in the United States in the past supplied the bulk of the canned milk in this market. They made it regardless of quality. Now it is manufactured by a Chinese firm in Canton, who imitate the tins, trade marks, label, and everything. The fact that the label is more often printed upside down than otherwise in no way detracts from the supposed genuineness of the article. If several firms of a like nature—dealers in butter, milk, hams, etc.—were to combine and keep their own agent here, as the flour and kerosene interests are represented, there is no question but that a hold could be obtained on these large and growing interests.

Sorghums in a Dry Year.

TO THE EDITOR:—You had a very interesting article on "Sweet Sorghum" in the Press about three or four weeks ago. The writer of the article showed that the "sweet sorghum" made excellent feed for cows and horses; that it could be sown now and in May, or later even—just the thing for a rancher to sow in this untoward year of drought.

I started in, when I read the article under consideration, to find the sweet sorghum and I am informed that it is not to be had in California. The seedsmen tell me it is not mentioned or listed in seed catalogues. Here is a stopper. Can you help me?

I am told at this moment that the sweet sorghum grows well in Kansas, where it is much thought of and much used. Surely it should not be hard to find. Santa Cruz. I. A. STEWART MACASKILL.

[We are glad that our reference to the value of sorghum in a dry year attracts attention. What is meant by "sweet sorghum" is one which has a considerable percentage of saccharine contents. There are a number of varieties of this character. In the article to which reference is made, one is mentioned under the name of "Early Orange;" the "Early Amber" is another sweet sorghum. Either of these is carried by San Francisco seedsmen. If you ask for "Early Amber" or "Early Orange" they will probably understand just what you desire. These varieties are called "sweet" in distinction from the non-saccharine varieties, such as Egyptian corn, Kaffir corn, Jerusalem corn, millomaize, etc. But the non-saccharine sorghums are used quite as widely as the sweet as summer feed in hot regions. Any of the many kinds of sorghum we have mentioned will be satisfactory. The seed could probably be ob-

tained by the carload in this State, for the plants have long been favorably known in the Sacramento and San Joaquin valleys.—Ed]

New Forage Plants.

According to the *Mark Lane Express* report of a recent agricultural show in Paris, the firm of Vil-morin-Andrieux had the good fortune to receive three gold and one silver medals for their various exhibits, which, of course, were not confined to grain. As this firm is so well known in England, it may not be out of place to mention two or three items which may prove of interest. A novelty was an early variety of maize, which probably came from China, and which grows with a small cob, and ripens very quickly. It will occasionally ripen in the neighborhood of Paris seven weeks after being sown in June; in England it would probably be safe to sow it in April. It is a crop that would afford excellent cover and food for game, and probably could be most usefully raised for such a purpose. Amongst other varieties of foodstuff was the chou moellier, a kind of kale, the peculiarity of which is that it grows a thick stalk, about 3 inches in diameter and about 5 feet high. It is slightly hollow in the center, and is not unlike a large "marrow" bone, as its name indicates. Some of it is purple and some green, and a single stem weighs from fifteen to twenty pounds, which can be grown very closely, so that considerable weight can be obtained. It is extensively used in Brittany, Ange and Mayenne, and is well suited for growing where it is difficult to raise roots. The giant red beet (*demi sucriere*) is a new and good variety, medium sized, well fitted for cattle. The above is only a mere sketch of what is really a grand selection of plants suitable for stock as well as human consumption.

A New Book on Feeding.

It will be interesting to progressive stock feeders to know that Prof. W. A. Henry of Madison, Wisconsin, the distinguished authority on rational feeding, has just published a book entitled "Feeds and Feeding," which presents full information on the researches of science into animal nutrition, the nutritive value of different foods, and the success which has been attained in the application of all this truth to practical feeding. As its title suggests, it is a handbook for the student and stockman, and is divided into three parts. Part I treats of plant growth and animal nutrition; how the plant grows and elaborates food for animals; the elements essential to plant life and plant building. It also speaks of the growth of the plant from a chemist's standpoint, and gives some valuable tables for the purpose of guiding the student in his consideration of this subject. Mastication, digestion and assimilation are treated in a very comprehensive manner and a comparison of the length of the intestines and capacity of stomachs of different farm animals is

made. The result of experiments with different kinds of feeding is also spoken of, and is a very valuable chapter, comparative tables being given. Part II treats of feeding stuffs, the leading cereals and their by-products. This is one of the most important parts of the book, and the reader will find here much room for careful study. Few realize the importance of scientific feeding, and what to feed to produce the best results. To all such this book will be found of incalculable value. Part III treats of the feeding of farm animals and also gives some good hints on the care of the different animals during gestation. Experiments in fattening are given and everything bearing upon this subject is touched upon. Prof. Henry's book can be ordered through the PACIFIC RURAL PRESS at \$2 per copy.

Some New Blacksmithing.

On Market street near Fifth, San Francisco, for several weeks a crowd rivaling in numbers the groups in front of the war bulletins has gathered to see a man in a window heating a bar of iron a cherry red and then hammering on it on an anvil. The wonderful part of it is that he heats the iron by thrusting it into cold water. This does away with all that we have associated with the work of hammer and anvil, the shop, the forge, the coals, blaze, bellows, etc.

The tank holding the cold water is about 3½ feet square. The water is about 2 feet deep. Two insulated wires from an electric dynamo are led into the room. The positive wire is connected with the metal lining of the tank. The other wire is secured by welding or solder or otherwise to a pair of tongs whose handles are covered with insulating material. The negative wire is long enough and flexible enough to allow considerable movement by the workman. The latter grasps with insulated tongs the spike, bolt, horseshoe or other object which is to be heated and dips it into the liquid. That's all. When it is hot enough he turns to his anvil and hammers the thing or drops it where another workman can pick it up, and then uses his magic tongs afresh to handle something else. Heating iron or steel to a cherry red by simply plunging it into cold water keeps the crowd as long as the man does it, and no wonder.

POPULATION is always on the increase. Land is not. Therefore land is becoming more valuable all the time. Real land values never depreciate. When they seem to do so it is because fictitious values have been placed upon them, or because of the increased purchasing power of money—always on account of some extraneous but relative condition or circumstance. It is a fact, too, plainly apparent and irrefragable, that intelligent application of productive industry to land is sure of adequate reward. Investment of money capital or the better capital composed of brains and muscle, is always safe and desirable. It is especially so at this time when the purchasing power of money is relatively at its maximum.

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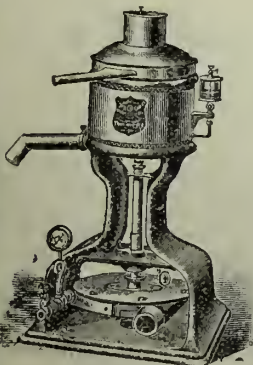
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| Vermont Experiment Station Dairy School..... | 0.01 |
| Minnesota Experiment Station..... | 0.02 |
| Pennsylvania Experiment Station Dairy School..... | 0.04 |
| Indiana Experiment Station Dairy School..... | Trace |
| Ohio Experiment Station..... | Mere Trace |
| North Carolina Agricultural and Mechanical College..... | Trace |
| Indiana State Board of Agriculture (Department of Dairy Produce and Cattle), No Trace | |
| Illinois Experiment Station..... | Less than 0.1 |
| Maine Agricultural Experiment Station..... | 0.03 |
| New Hampshire Agricultural College..... | 0.01 |
| Massachusetts Agricultural College..... | 0.01 |
| Wisconsin Agricultural Experiment Station..... | 0.02 |
| So. Carolina Clemson Agricultural College..... | 0.04 |
| Michigan Agricultural Experiment Station..... | 0.05 |
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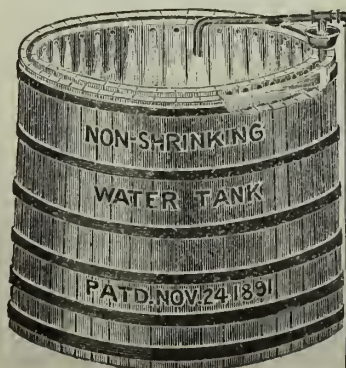
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THE HOME CIRCLE.

A Norse Legend.

An old Norse king in his great hall sat;
The night was dark without,
The tempest roared through the forest drear
And whirled and tossed about.

Into every recess of the hall
The glow of the firelight went—
And counselors sat with the king and spoke
In converse deep intent.

Through the open window flew a bird
Into the cheerful light—
O'er their heads a moment it flew, then
Into the darksome night.

"Such," said the king, "is the life of man,"
His grave thought to explain—
"Out of the darkness into the light,
Lost in the night again."

"Yes, sire," a white-haired sage replied,
"Tis partly as you say,
But the lone bird has its nest beyond;
Thither she'll wing her way!"

—G. W. Worthen.

The Bravest Fight in Naval History.

The one sea fight of the American struggle for liberty that is of unfailing interest was that in which John Paul Jones, in the Bonhomme Richard, whipped the British frigate Serapis. And the student need not go far to seek the reason for this interest, because it is found in the fact that it was the man that won, and neither the ship nor the crew. It was won in spite of such obstacles as no other man has ever been obliged to face at sea. It was a victory typical of the ultimate success of the American cause, for it was a victory that was literally dragged out of the breakers of destruction.

When the Bonhomme Richard fell in with the frigate Serapis of fifty guns, the wind was so light that they merely drifted over the oil-smooth water. The sun sank out of sight behind the hills and daylight faded away into darkness, so that even the lofty towers of canvas were seen only as the faintest shadows. But each side was hunting for the other, and eventually, in the profound silence of a night at sea, the Bonhomme Richard and the Serapis drew near each other. It was then exactly seven o'clock.

At the first fire two of the three eighteen-pounders in the lower deck broadside of the Bonhomme Richard burst. * * * And the British noted with glee that thereafter none of these, the heaviest guns on the Yankee's ship, were fired. The crews of the two guns that burst were all either killed or seriously wounded, and the men on that deck were called up to the main deck to help work the guns there. * * *

For one hour the two ships drifted side by side, drawing slowly nearer to each other, while the men, with desperate energy, worked their guns. But there was a vast difference in the guns. "We had ten eighteen-pounders in each battery below," wrote an officer of the Serapis afterward. "I do not see why any shot should have failed."

And no shot of that battery did fail during the first hour, and when they failed later it was because they had shot the six ports of the Bonhomme Richard into one huge chasm, not only on the side of her next to them, but on the further side as well, so that when they fired some of the battery the balls passed clear and fell into the sea beyond. There was not a splinter of the American ship left in front of them. They had not only cut away the walls of the Bonhomme Richard, but they had practically cleared her lower gundeck. There was no one left there but a few marines who guarded the line of boys passing cartridges from the magazine up to the guns on the upper deck.

Nor was that the worst effect the English fire had upon the Bonhomme Richard. Taking advantage of the rolling of the vessels in the long gentle swell, the English had been able to send a half dozen of their eighteen-pound shot into the Bonhomme Richard below the water line, and she was "leaking like a basket."

Then the voice of Captain Pearson was heard asking if the American ship

had surrendered. And John Paul Jones replied:

"I have not yet begun to fight."

Once more the commander of the Serapis strove to get into position to rake, but as the Serapis wore around the Bonhomme Richard forged ahead. Jones was determined to keep close to the enemy, and soon the jibboom of the Serapis fouled the starboard mizzen rigging of the Bonhomme Richard.

Turning to Carpenter Stacy, who was near at hand, Jones ordered a hawser brought. When it came he helped with his own hands to lash the jibboom of the Serapis fast to the mizzenmast of the Bonhomme Richard. While doing this the hawser fouled in some way and Stacy began to curse.

"Don't swear, Mr. Stacy," said Jones. "In another moment we all may be in eternity, but let us do our duty."

They did their duty, and the ships were held hard and fast, and John Paul Jones emphasized his faith in what had been done by saying:

"Well done, my brave lads; we have got her now."

And so they had in one way. * * * But in the sense of capturing the Serapis never was such a triumphant cry raised with a less hope of accomplishing the result.

The ships now lay with their starboard sides together. During the last half hour or so the crew of the Serapis had been working its port battery. When they ran across to work their starboard guns they were unable to open their ports amidships because the ships were touching each other, so they fired through their own closed ports, blowing the portlids off.

On the Bonhomme Richard the men were no less determined. Their remaining guns were fought even with cheerful vigor. * * * The ships were side by side, and the guns were muzzle-loaders. Each crew, to get its charge sent home, had to poke its long-handled rammer through the enemy's port before it could be inserted into the gun's bore.

"Fair play, you Yankee," roared an English gunner, poking his rammer through the Yankee's port.

"Mind your eye, Johnny Bull," replied the Yankee, following the same movement.

Alas! The "Johnny Bull" had been a trifle ahead of the Yankee, and firing his gun he dismounted that on the Bonhomme Richard.

The British were, in fact, soon quite as successful in their handling of the main deck battery as they had been with that on the lower deck. Every twelve-pounder but one of the Bonhomme Richard was silenced in one way and another; and so, too, were the little nine-pounders on the fore-castle. There were then but two cannon left in service on the Bonhomme Richard, the two nine-pounders on the fighting side of the quarter deck.

John Paul Jones had been working these two with his own hands, loading, one with a double shot to cut down the enemy's mainmast, and the other with grape and canister to sweep away the crew on her deck.

In this desperate straight and when just in the act of ordering another nine-pounder brought from the off side that he might use it on the crew of the Serapis, his chief surgeon came up from below to announce that the water was coming in so fast as to float the wounded, and to ask that the ship be surrendered before she sank with all hands.

Turning on the surgeon with perfect self-possession, Captain Jones replied, as if astounded at the request:

"What, doctor! Would you have me strike to a drop of water? Here, help me get this gun over."

The doctor ran back to the wounded without delay, but Jones got the gun over, and served it, too. * * *

The enemy made an attempt to board. John Paul Jones with a few men, pikes in hand, stopped him. The moonlight was now bright, and seeing this man before them—this "pirate" they quailed.

Meantime matters had been going from bad to worse below decks on the

Bonhomme Richard. Not only was she steadily filling with water, but the blazing wads from the enemy's guns had set her afire in several places. These fires spread rapidly in spite of the efforts of some men sent below.

And then came the Alliance, under Captain Landais. Sailing across the bow of the Bonhomme Richard he fired a broadside. The fore-castle of the Bonhomme Richard received the greater part of the projectiles, and Midshipman Caswell was killed, while ten or a dozen seamen were killed or wounded. Private signals were set, and a score of voices yelled to the Alliance that they were firing into the wrong ship, but coming down on the broadside of the Bonhomme Richard she fired again, so that the cry arose:

"The Alliance has been captured by the British and is now attacking us."

It is likely that this is the only moment when John Paul Jones thought of yielding, but as the Alliance drew off he continued the fight, not only against the enemy, but against the fire and water in his own ship.

And more to be feared was the fire and water. The ship was filling, and when the carpenter tried the water he found it five feet deep in the hold while the fire was rapidly approaching the magazine. On coming from the well, he said disconsolately that the ship would sink. At that the master-at-arms liberated the prisoners, two or three hundred in number who were confined below, and told them to save themselves. The struggle and confusion that followed as these men came from their quarters were frightful. Here were, indeed, many more English subjects running free than all the crew of the Bonhomme Richard, who were below decks. Then the gunner who had heard the remark about sinking and had seen the prisoners liberated, ran to the poop deck, and in a panic of fear stove to find the signal halliards that he might haul down the flag in token of surrender. He was shouting as he ran:

"Quarter! For God's sake, quarter! Our ship is sinking!" but John Paul Jones heard the words, and turning around he hurled an empty pistol at the man's head, fractured his skull by the blow, and knocked him headlong down the hatch.

"Do you call for quarter?" shouted Captain Pearson, who had heard the cry.

"Never!" replied John Paul Jones. "Then I'll give you none," replied Pearson, and the fight went on, while Jones sent his resourceful lieutenant, Richard Dale, below to see why the cartridges of powder were no longer coming up, for neither he nor Dale at this moment knew that the prisoners had been released.

But when he saw the condition of

(Continued on page 287.)

The Work of the Red Cross.

The Red Cross flag has no Christian meaning in the sense that many suppose. It is broader than Christianity itself, because it has neither prejudice nor bonds; Christian, Mohammedan and pagan are the same in the eyes of the Red Cross. The choice of the flag was a well-merited compliment to Switzerland, who had given her kind services in the cause by officially issuing the invitation to the nations of the world to meet in conference, and by providing the place. Her national flag is a white Greek cross on a red ground, and the colors were simply reversed.

In each country that adopted the treaty, one national organization is formed, and that society alone is recognized by its national government, also by each other national organization and an International committee located at Geneva, Switzerland, the latter being the medium of communication and assistance between nations, in order to prevent any possible complications by reason of nationality and jealousy.

The national ladies have the right to carry on the work of gathering funds and materials in such manner as they deem best. In those countries where strict laws have been passed to prevent the misuse of the Red Cross (and such is the case in most countries) local auxiliary societies are formed. In our country no such laws exist; therefore it has not seemed wise or just to sanction subsocieties. With no power to restrain them the tendency of local societies would be to overreach and subvert the purposes of the treaty.

I can make but the briefest reference to the work performed by the societies.

The first war to bring the treaty into practical operation was that of 1866 in Germany, Austria and Italy. Austria had not yet joined, but her citizens raised, and applied nearly half a million dollars. Italian societies raised nearly \$50,000. French and Swiss societies aided, this being the first instance of neutral aid.

Germany's societies were fully prepared, and more than \$3,000,000 were applied, and half a thousand volunteers, men and women were employed. The results of the war fully proved the incalculable value of organized, authorized civil war.

Next came the Franco-Prussian war and the Commune, 1870-1871. In Germany more than 2000 committees arose at once, with a central committee at Berlin. More than \$14,000,000 of money was raised. Hospitals, hospital trains, and preparations on the grandest scale were organized. France was not so well prepared, but upwards of \$2,000,000 was expended, and more than 100,000 were cared for. Neutral societies also rendered great aid. One striking instance was that of 85,000 French soldiers who peacefully in-

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The frank testimony of a famous physician.

When Dr. Ayer announced his Sarsaparilla to the world, he at once found the physicians his friends. Such a remedy was what they had looked for, and they were prompt to appreciate its merits and prescribe it. Perhaps no medicine—known as a patent medicine—is so generally administered and prescribed by physicians as Dr. Ayer's Sarsaparilla for blood diseases, and diseases of the skin that indicate a tainted condition of the blood. Experience has proved it to be a specific in such diseases, and sores of long standing, old ulcers, chronic rheumatism, and many other like forms of disease have yielded to the persevering use of Dr. Ayer's Sarsaparilla after other medicines had utterly failed. The testimonials received from physicians to the value of this remedy would fill a volume. Here is one leaf signed by Rich'd H. Lawrence, M. D., Baltimore, Md.

"It affords me pleasure to bear testimony to the success which your preparation of Sarsaparilla has had in the treatment of cutaneous and other diseases arising from a vitiated condition of the blood. Were it necessary, I might give you the names of at least fifty individuals who have been cured of long-standing complaints simply by the administration of Dr. Ayer's Sarsaparilla. One very remarkable instance was that of a quite old woman who had lived at Catonsville, near this city. She had been

afflicted with the rheumatism for three years, and had taken as she had informed me, more than one hundred dollars' worth of medicine to obtain relief, yet without any beneficial result. I advised her to try a bottle of Dr. Ayer's Sarsaparilla and told her that if it failed to do her good, I would refund the money. A short time afterward, I learned that it had cured her, and a neighbor of hers similarly afflicted was also entirely relieved of his complaint by its use. This is the universal result of the administration of your Sarsaparilla. It is without exception, the best blood purifier with which I am acquainted."

There is no other similar medicine can show a similar record. Others have imitated the remedy. They can't imitate the record. Dr. Ayer's Sarsaparilla has the friendship of the physician and the favor of the family, because it cures. It fulfills all promises made for it. It has healed thousands of people of the most malignant diseases that can mutilate mankind. Nothing has ever superceded it and nothing ever will until a medicine is made that can show a record of cures greater in number and equal in wonder to those wrought by Dr. Ayer's Sarsaparilla. Dr. Ayer's Curebook, a story of cures told by the cured, is sent free on request by the J. C. Ayer Company, Lowell, Mass. Write for it.

vaded Switzerland in a famished condition, 10 per cent of them being sick. Their every want was provided for by the Red Cross of Switzerland. The international committee asked for and obtained from Germany 2,500 incurable French soldiers, supplied all their wants on their way through Switzerland, and returned them to their homes.

The wars of 1876-78, involving Turkey, Servia, Montenegro, Greece and Russia, furnished the next scenes of activity. The work of the Russian Red Cross was the most notable. Regarded with jealousy first by the military, it was soon solicited to take control. It raised nearly \$17,000,000 and applied more than \$13,000,000 of it. In Turkey the Red Cross emblem found its first obstruction. The Turkish soldiers regarded it from a religious point of view, and so strong was their prejudice that a red crescent had to be substituted by that society.

The latest display of the Red Cross work has been in the Japanese army. How frequently we heard it remarked that the Japanese displayed such astonishing mercy and civilization, that they are so quick to adopt the ideas of more advanced nations, etc.! In 1886 Japan joined hands with the Red Cross nations. Her ruler, the Mikado, became a president of the Red Cross society in a civil capacity, and therein lies the secret of Japan's wonderful development in humane ideas. She has been an apt scholar, and deservedly received the commendation of the world.

Picture, if you can, scenes that would have ensued in this war in the absence of the kindness and mercy inculcated by the Red Cross.

In our own country the war signal has not been heard since 1882, when we entered the treaty; but the elements have wrought sad destruction. Foreseeing these conditions, I asked of the other societies, through the international head, the privilege to include calamities other than war when I organized the American National Red Cross. My request was cordially granted and hailed with enthusiasm. Other nations have since adopted it.

I need only tell in a few words of our own work. It includes thirteen fields of disaster in as many years. Floods, famines, fires, epidemics and storms have caused the suffering, and more than \$1,000,000 has been applied in the aggregate by the willing hands of those that have for the most part volunteered their services in behalf of the great cause of humanity.—Clara Barton, president of the American Red Cross.

Popular Science.

According to the computations of Prof. Hamy, the black race embraces about one-tenth of the living members of the human species, or 150,000,000 individuals.

Certain butterflies have very transparent wings, and these are thought by Haase to be even more effectual for protection than conspicuous "warning" stripes or other markings.

Meda Wilhite of Backner, Ky., now four years old, is probably the largest child of her age in the country. She weighs 120 pounds, has a chest measurement of thirty-eight inches, and is four feet high.

Fatigue causes a chemical change in the blood, resulting in the production of a poison resembling the vegetable poison which certain savage tribes use for arrows. When the blood of a tired animal is injected into the arteries of a fresh one, the latter exhibits all the symptoms of fatigue.

Birds have an extremely rapid blood circulation, their average temperature being from 103 to 110; they all have wings or something that represents wings, though they do not all use them for flying, and they are universally provided with clothing, which is one of the most decorative things in Nature, unless flowers may be excepted.

The depth to which the sun's rays penetrate water has been recently determined by the aid of photography. It has been found that at a depth of

533 feet the darkness was to all intents and purposes the same as that on a clear but moonless night. Sensitive plates exposed at this depth for a considerable length of time gave no evidence of light action.

Curious Facts.

The bottom of the Pacific, between Hawaii and California, is said to be so level that a railroad could be laid for 500 miles without grading anywhere. This fact was discovered by the United States surveying vessel engaged in making soundings with a view of laying a cable.

The crown of England is kept in the Tower of London, and not in the queen's dressing room. It is never brought out, excepting on grand state occasions, but whenever a ceremony, such as a drawing room or levee takes place, the queen wears a circlet of diamonds in the form of a crown on her head.

An English writer says there is cruelty in the keeping of goldfish. Half of such captives die from sheer want of rest. As fish have eyes so formed that they cannot endure the light, in a glass vessel they are in an entirely wrong place, as is evident from the way in which they dash about and go round and round, until fairly worn out.

The great pyramid of Cheops is the largest structure ever erected by the hand of man. Its original dimensions at the base were 764 feet square, and its perpendicular height in the highest point 448 feet. It covers four acres, one rood and twenty-two rods of ground, and has been estimated by an eminent English architect to have cost not less than \$165,000,000.

In Nice, France, there is a society called "The Friends of Trees." The forests and mountains being almost completely devastated and denuded in the maritime Alps by the axe of the peasant, a prize is given to land owners who plant trees on vacant spots, and an annual Alpine fete destines a donation of \$100 to the society or individual who plants the largest number.

The different countries of Europe vary greatly in the average stature of their peoples. The Scotch are the tallest, averaging five feet ten inches, on a level with the Polynesians and Armenians. At the other extreme are the southern Italians, French and Spaniards, all the shortest peoples, except the dwarf races of Africa. The average height in Ireland is five feet nine inches; of England and Scandinavia, five feet seven inches; of Wales, Germany and Denmark, five feet six inches; eastern France, five feet five inches; Spain, Switzerland, northern and central Italy, five feet four inches; Portugal and southern Italy, five feet three inches.

Gems.

True courage and courtesy always go in hand. The bravest men are the most forgiving, and the most anxious to avoid quarrels.—Thackeray.

You cannot dream yourself into a character, you must hammer and forge yourself one.—Froude.

Be silent always, when you doubt your sense,
And speak, tho' sure, with seeming diffidence.

—Pope.

There is many a man whose tongue might govern multitudes if he could govern his tongue.—Anon.

Recently two gentlemen, driving in a wagonette, were smoking, when a spark falling from one of their cigars set fire to some straw at the bottom of the carriage. The flames soon drove them from their seats; and, while they were extinguishing the fire, a countryman, who had for some time been following them on horseback, alighted to assist them. "I have been watching the smoke for some time," said he. "Why, then, did you not give us notice?" asked the astonished travelers. "Well," responded the man, "there are so many new-fangled notions nowadays, I thought you were going by steam."—Boston Herald.

Fashion Notes.

Corsets grow more gorgeous every day. It may seem hard to believe, but women of really refined taste are wearing stays made of plaid silk and flowered satin that would shame the rainbow tints. Blue, green, yellow, orange and red are mixed together in a conglomerate, kaleidoscopic mass, and these giddy thought stranglers, as anti-corset people call them, are calculated to make our great grandmothers, who thought that woman should dress in pure white, turn over in their graves. Many women have these loud corsets made to match their silk petticoats.

Stylish street dresses are made of black and white checked tweed, with a green glaze silk blouse vest for a note of color and an inner vest of white corduroy peeping on either side.

Some of the blouses and other fancy waists are made with double fronts, like two blouses, one cut down in a round or square shape in the neck, and added to this the outer one is very often slashed in places, showing glimpses of the waist beneath, which is always made of some pretty contrasting material. Just at the moment, dark green, blue, brown, red, or black cloth blouses are being made with under blouses of shepherd's check silk or brilliant Roman-striped or plaided taffetas.

Bordered fabrics, by the yard or imported in robe patterns, are greatly in evidence among both spring and summer dress materials.

For spring uses the chapeau par excellence is the English walking hat. The sailor model, in its new, improved outlines, is not deposed by this very popular hat, however; nor will it hold a less important position later on; but for the present the English shape has the innings at the milliners. This hat is sufficiently varied in its style and contour to adapt itself to all types of faces, for while the difference in the brim and crown is not at all pronounced, the manner of arranging the trimmings upon the hat for different people quickly transform its outlines to the effect desired.

Dainty ribbons with gauze borders come in all the pretty colors.

A novelty in dress trimmings is a fine fawn-colored batiste embroidered all over in a minute design of chenille. This is used for cuffs, collars and revers on silk waists. Oriental embroidered insertions, set in between groups of tucks, form another mode of trimming. Waists of plain silk in medium and light colors are striped up and down diagonally across the sleeves with velvet ribbon of a darker shade.

It is also prophesied that black taffeta will be very popular for spring gowns, with elaborate trimmings of lace and velvet ribbon. Pretty skirts of black taffeta, to wear with fancy waists, are seen now, and the decorations are often narrow ruffles of the same set on to form a round, pointed overskirt, arranged around the skirt in festoons or up and down the front seams, spreading out separately toward the bottom, where they extend all around.

For golfing costumes the circular skirt of double-faced material is much used, and the simple golf cape is considered better style than the fanciful shawl cape. A new golf dress is made of smooth brown cloth, finished with rows of stitching. The jacket is quite short and is worn with a scarlet waistcoat, which opens in a square at the neck over a stiff shirt and a mannish tie. Of course, there is a brown cape with a tartan lining.

DOMESTIC ECONOMY.

Domestic Hints.

BOSTON STEAMED BROWN BREAD.—One and a half coffee cupful each of corn, rye and graham meal, one teaspoonful salt, one and a half teaspoonful soda. Sift or mix together. Put in two cupfuls New Orleans molasses and two cupfuls sweet milk. Beat together and pour into a tin form. Place in a kettle of cold water. Steam four hours.

TOMATO CREAM TOAST.—Melt three tablespoonfuls of butter; cook in it three tablespoonfuls of flour, then add slowly one cup and a half of stewed tomatoes, strained, one-fourth teaspoonful of soda, half a teaspoonful of salt, and lastly, half a cup of scalded cream. Have ready six slices of bread, toasted; dip in the sauce and serve at once.

CHOCOLATE CARAMEL FILLING FOR CAKE.—Two cupfuls of sugar, one-half of a cupful of sweet cream, boiled together for five minutes. Remove from the fire, flavor with vanilla, stir to a cream and spread on the cake, which must be baked in a long, square-cornered tin and not removed until cold. Melt one-third of a cake of chocolate and spread over the cake after it has cooled.

SOFT GINGERBREAD.—One-half cupful of butter, one cupful of molasses, one cupful of sugar, one cupful of sour or buttermilk, one teaspoonful of soda dissolved in boiling water, one teaspoonful of cinnamon, two eggs, about five cupfuls of sifted flour, or enough for a moderately thick batter. Cream the butter, sugar, molasses and spice; set the mixture on the range until lukewarm. Add the milk, then the beaten eggs, the soda, and last, the flour. Beat hard for five minutes. Bake in small tins or a single cake, as preferred. It is excellent either hot or cold.

Hints to Housekeepers.

When grating a nutmeg, always start from the blossom end. Why? Because it will then grate much more readily.

A hair dresser says that an old silk handkerchief is much better to use in stroking the hair night and morning than a brush.

If you wish to have the clothes look more glossy, use soapy water in making starch. This also renders the iron less likely to stick.

If kerosene must be employed as a fire kindler, store it in an old can and keep a few cobs for lighters. One cob thoroughly soaked will do the work.

When the fingers are stained in peeling fruits, preparing green walnuts or in similar ways, dip them in strong tea, rubbing them well with a nail-brush, and afterward wash them in warm water, and the stains will disappear.

An old scrap basket that has been thrown aside, or a peach basket, may be made into a convenient receptacle for sweepings. A maid can readily take it around with her from room to room to empty into it the filled dust-pan. The basket should first be lined with glazed paper-cambric.

One of the most common and most expensive wastes of the kitchen is throwing out of bone after the trimming of meat. Bone is invaluable for soup. Unless skill is applied, much of the lean meat is cut out with the bone and rejected fat. The waste of meat is the most expensive kind of food waste. The protein of beef is several times as expensive as that of flour.

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Some Notes on Sulphur and Sulphur Products.

Written by JNO. W. GRAY.

It has been said that the consumption of sulphuric acid by a nation is a true index of its commercial prosperity. The large increase in the manufacture of this article in America, of late years, and the rapid growth of the industries which are large consumers of and dependent upon the acid for their operations, have been remarkable, and can be truly accepted as one of the certain indications of the constantly increasing commercial prosperity of the United States. The economic results achieved by obtaining sulphur from pyrites, in lieu of the more expensive brimstone, in the preparation of the acid, has greatly stimulated the mining of the former material, and has opened a field of investigation offering tempting rewards to those who may discover the means of utilizing the wastes from the burning of pyrites.

As the important and expensive ingredient in sulphuric acid is sulphur, and as, besides, sulphur has many other applications and uses of commercial importance, it would seem as if the consumption of sulphur by a nation would appear a truer index of its commercial prosperity than that of sulphuric acid, and that the saying quoted above might rightly be changed to so read. As the United States is an enormous consumer of sulphur, the occurrence, distribution, value, etc., of this substance are matters of interest to many, and the publication of a few notes concerning the sulphur industry in general might not be out of place.

The uses of sulphur are varied and extended—for making gunpowder, for bleaching purposes, for insecticides, for taking impressions, etc., and for the manufacture of sulphuric acid, the most important substance consumed in chemical manufactures. This acid is very largely used in the refining of petroleum and the preparation of the rock-phosphate fertilizers. Other uses are for the manufacture of mixed acids for making explosives, such as nitroglycerine, cellulose, etc., for bleaching paper pulp, for preparation of nitric, nitrous and hydrochloric acids, for manufacturing purposes, for carbonating soda and mineral waters, and for general chemical uses. Few better trades are to be found in this country than those in products which come directly from sulphur.

Sulphur is obtained from deposits of the native mineral and from pyrites. The sulphur of commerce is the native material purified. As found, it occurs in rocks or mixed with certain earthy impurities. The occurrence of the mineral may be described under two conditions: First: The solfatara type, deposited directly from sulphurous gases in regions of expiring or active volcanoes, forming solfataras. The sulphur is found in crevices in the lava or tuffs, or in the sands, ashes and clays resulting from the action of acid fumes on the lavas. Second: The gypsum type, resulting from alteration of gypsum by reducing action of bituminous matter, occurring in a series of sedimentary rocks, with marls, shales and limestones prominently developed. The gypsums, as a rule, have been formed in the evaporation of salt water, and often has bodies of rock salt associated, as in Sicily.

The first condition of occurrence includes the deposits of Celebes, Alaska, California, Nevada and Utah; also, Japan, Mexico, New Zealand, New Hebrides, etc., while the second type includes generally the deposits of France, Greece, Spain, Italy, Russia, and those of Louisiana and Texas.

Although the United States is the largest buyer of sulphur, its home resources have not been much developed. Many countries produce sulphur, but Italy has always been the chief producer. The reason for this has not been the absence of deposits elsewhere, but the fact that competition has been in great measure prevented by the cheapness with which Sicilian sulphur has been mined and put upon the mar-

ket. In 1896 a syndicate was organized to control the Sicilian sulphur product. Production was fixed at 340,000 long tons annually, while the production in Great Britain, by the Chance-Claus process, was at the same time limited to 40,000 tons. This trust was to maintain the strength of the market, which I believe it has succeeded in doing, owing to the absence of dangerous competition.

The greater part of Sicilian sulphur is still extracted from the gangue in kilns, the necessary heat being supplied by the sulphur. In some cases coal or wood is used as fuel, or the sulphur melted by superheated steam, or a solution of calcium chloride, of which the boiling point is slightly higher than the melting point of sulphur. The proposition to extract the sulphur by means of carbon disulphide does not seem to have become successful. The consumption of sulphur as fuel in kilns is one-third or more of that contained in the rock. Rock containing less than 10 per cent sulphur is not treated. The average of the Sicilian mines is about 20 per cent. The cost of treatment is about 19 cents, and the cost of sulphur of the best quality, delivered f. o. b. on ships in Sicilian ports, is said to be about \$16. The regenerative furnace for treating the rock has been largely adopted, and steam extractors are coming into general use.

In Great Britain the Chance-Claus process, already mentioned, is used. This is a chemical process, which produces sulphur from the great mass of waste products of soda works. A large part is recovered as "flowers of sulphur," which finds a ready sale on account of its purity and attractive appearance. In this process 10 to 15 per cent of sulphur is lost in gaseous form and in flour. Nevertheless, large amounts of sulphur are yearly produced, and at prices which make the process a commercial success.

The production of sulphur in countries other than Italy is not great, and rarely amounts to much more than the local demand. In the eastern hemisphere Japan has been a considerable producer, and some of her product finds its way to the west coast of America.

Although there are several deposits of sulphur in California, none are mined in any large way, if at all. Large deposits of the mineral are known at many places in the United States. In Nevada the Rabbit Holes Springs mines have been worked irregularly, but the cost of production, transportation charges, etc., seem to have made the cost so nearly equal to that of imported sulphur as to limit profitable mining. The important deposits of southern Utah are being successfully worked with increasing but as yet limited output. The great deposits of Louisiana, probably the most important known, have not so far produced largely, owing to peculiarity of occurrence and difficulty of mining. None of the promising Texas deposits have been made producers, although efforts to that end are now being made. Sulphur in quantity is reported from Alaska, Washington, Wyoming and Arizona, but none of the deposits are at present being developed. In northern Mexico some promising deposits are now being opened up, but little is known definitely of them.

An enormous quantity of sulphur is used in this country, and the market is a tempting one for local producers; but in a general way it may be said of sulphur deposits that they are apt to be irregular, although rich in places, and that extended pits or drill holes are desirable before definite conclusions can be drawn as to the value of deposit. Deposits well located which can be economically worked, and with cheap transportation, especially if by water, ought to easily command the attention of capital, and it is a matter of some surprise that this branch of mining is not more actively pursued, especially in this part of the world, where such enterprises, under the right conditions, would undoubtedly prove profitable.

Considerable deposits are said to exist in Peru, in the volcanic regions of

New Zealand, and in some of the islands of the New Hebrides group. Some of these are large and important, and could be depended upon to supply sulphur in quantity.

Australia imports sulphur from Europe for its chemical industries. In New Zealand there is a growing industry in the conversion of the phosphate of lime found there into superphosphates, and there is also a demand for sulphur for the manufacture of sulphuric acid. In California and in South America, especially in Chili, there is a great demand for the material. All these localities could easily be supplied from some of the places last mentioned, and there seems little doubt that good markets could be found, if the working of the deposits were undertaken.

The consumption of sulphur in the United States, derived from the native mineral, was as follows: From home production, 3800 long tons; imports (mostly from Sicily), 146,420 tons. Average price in New York, about \$19. The price on this coast for best quality rules higher, as it also naturally does at all inland points.

The rapidity of growth in this country of all industries upon sulphur as the base of their manufacturing is astonishing. The consumption of pyrites in 1890, in the manufacture of sulphur products, was very large, and two-thirds of the mineral used was imported from abroad. In the Mineral Industry, from which much of the information in these notes was obtained, it is stated that the best practice of the world is now based upon getting sulphur from pyrites, at about half the price of brimstone. In a most interesting manner the possibilities of mining for pyrites are pointed out, and the unlimited demand which exists for the products of such ores is called to the attention of capital. The proposition of mining and utilizing American pyrites for all the minerals they contain offers a means of freedom from the dictates of the Sicilian mine owners, and the inauguration of the new industry mentioned would save the payment of millions each year to foreign producers of brimstone.

Women and the Wheel.

From the Gazette, Delaware, Ohio.

The healthfulness of bicycle riding for women is still a disputed question between eminent physicians and health reformers.

Used in moderation it surely creates for women a means of out-door exercise, the benefit of which all physicians concede. Used to excess, like any other pastime, its effect is likely to be dangerous.

The experience of Miss Bertha Reed, the seventeen-year-old daughter of Mr. J. R. Reed, 335 Lake St., Delaware, Ohio, may point a moral for parents who, like Mr. and Mrs. Reed, have experienced some concern for their daughters who are fond of wheeling. In the fall of '96 Miss Bertha, who had ridden a great deal, began to fail in an alarming manner. She grew steadily paler and thinner, and it appeared she was going into consumption. Rest and quiet did her absolutely no good.



She Rides Well.

A physician found her pulse at 104—a very high rate. Thinking this may have been due to temporary nervousness when he examined her, he watched her closely, but her pulse continued at that rate for two weeks. He was satisfied then, from her high pulse and steadily wasting condition, that she was suffering from anamia or a bloodless condition of the body. She became extremely weak, and could not stand the least noise or excitement. In this condition of affairs they were recommended by an old friend to get some of that famous blood medicine, Dr. Williams' Pink Pills for Pale People. They did so, and almost from the first dose Bertha began to improve. She continued to take the pills and was by means of those pills made entirely well, and more grateful people than her parents cannot be found in the whole State of Ohio.

Dr. Williams' Pink Pills have proved a boon to womanhood. Acting directly on the blood and nerves, they restore the requisite vitality to all parts of the body, creating functional regularity and perfect harmony throughout the nervous system. The pallor of the cheeks is changed to the delicate blush of health, the eyes brighten, the muscles grow elastic, ambition is created and good health returns.

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Makes the wagon pull easier, helps the team. Saves wear and expense. Sold everywhere.

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that will effectually destroy Ticks, Lice, and other parasitic pests, and which will cure Scab, Paper Skin, Gangrene, Grub, etc., without discoloring or injuring the fleece and without injury to animal or operator, deserves the attention and patronage of the shepherd.

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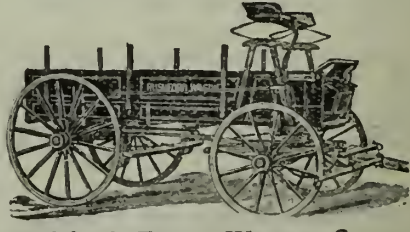
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| 47 | 2 1/4 " | 3 " | 2,500 " |
| 48 | 2 3/4 " | 2 " | 4,000 " |
| 48 | 2 3/4 " | 3 " | 5,000 " |
| 49 | 2 3/4 " | 2 1/4 " | 5,000 " |
| 50 | 2 3/4 " | 3 " | 6,500 " |
| 51 | 3 1/4 " | 3 " | 8,000 " |
| 52 | 3 1/4 " | 3 " | 10,000 " |
| 53 | 3 1/4 Concord Steel. | 3 " | 4,000 " |
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How Coke is Made.

Some one has called coke "mineral charcoal." He meant that coke was soft coal from which the gasses had been expelled by heat out of contact with air, just as wood is made into charcoal by being burned without air. The crushed coke, which is becoming a favorite fuel with housewives and cooks, is the coke left as a residue in the making of illuminating gas. It is soft, dull black and has a pumice-like texture, but the coke which is made for foundries and blast furnaces is hard and is of a silvery gray color, almost metallic in its luster. This is the Connellsville coke, produced in the coke region of Pennsylvania, made famous by its bloody labor strikes and fatal conflicts between the "Huns" and malitia. Thousands upon thousands of tons of coal are mined in the Connellsville country and burned in the thousands of ovens into coke, and when any labor trouble checks the output of this region, foundries, machine shops and blast furnaces all over the country shut down. The two experimental ovens which were built in this district fifty-three years ago have grown into 20,000 ovens, and the few bushels of coke which the pioneers tried vainly to sell have expanded to over 5,000,000 tons yearly.

The very nature of the industry connects the coal mine and the coke oven with the closest intimacy. The ovens stretch out from the shaft top on either side of the railroad tracks, built so close together that the "bank" looks like a solid wall, pierced with low arched windows set in at short intervals. Over the bank ovens runs a narrow gauge track, and steam and smoke cloud the perspective. The Connellsville coke region is the largest producing district in the world, and their coke-making has reached its highest point toward perfection. The Connellsville ovens are what is known as the "beehive" type, varying from 10½ to 12½ feet in diameter and from 6 to 8 feet in height. Each oven produces at a charge from three to four and one-half tons of coke each twenty-four hours, which is the length of time required to produce coke from coal. All coal will not coke, for a non-coking coal will crumble with the heat, whereas, a "coking" coal will hold its substance and become a mineral sponge when the gasses are driven out.

When the coal is brought to the shaft top from the bottom of the mine, it is dumped into chutes which convey the coal to the "larries," as the small dump cars which run on the tracks over the ovens are called. Small locomotives draw the larry wagons to the ovens in the larger plants, but in others, steel cables, horses or mules are the motive power used to carry the coal to be coked. Time and labor are saved by machinery in the mine, on the shaft top and around the ovens. The mine cars brought up on the "cages" from the bottom of the shaft are pushed off the cage and an empty car run on automatically, and other forms of self-dumping cages are used. The coal slides down the chute and over the screens into the bins from which the larry wagons are loaded.

When larries reach the ovens they are dumped and the coal slides down. When an oven is charged the coal is leveled down and the door is bricked up, and all the chinks and openings are closed with loam, except a space of about two inches at the top of the door, which extends across the full width of it. The heat of the oven—for a full charge of coal is put in as soon as the charge of newly made coke has been taken out—set fire to the coal on top. The draft and of course the air are so regulated that the coal burns from "out to in," and the amount of air necessary to keep up a slow, smoldering combustion is regulated by closing or opening airways in the door. In forty-eight hours the coal is coked and the door is broken open, and the glowing coke in the oven is drenched with water to cool it, so that it will not set fire to the cars, for the coke is loaded

directly into the freight cars standing on the tracks before the bank of ovens.

Enormous quantities of water are used in cooling coke. As it requires about 600 gallons of water to cool one charge of coke, the Connellsville district, when all the ovens are at work, uses up over 5,000,000 gallons of water a day, enough to supply a town of 50,000 inhabitants. Sometimes this water has to be pumped from a distance, for the mine water is strongly impregnated with sulphur, and sulphur is just what the coke maker does not want in his product. One large coke works in this district, in order to be assured of pure water pumped it from a river eleven miles from the ovens, using an 8-inch pipe which had formerly been used for supplying a town with natural gas. The coal mined in the Connellsville district is remarkably pure and is all coked. The vein from which is taken is 9 feet thick, and the coal is mined on the "room and pillar" system. The great loss of life caused by miners using naked lamps, and so igniting the explosive gases which collect in the workings, has led many miners to adopt the electric incandescent light for the shaft, bottom, pump-room and stables, and the miners are required to carry safety lamps. As the light is none too good, many miners take fearful risks by using naked lamps. The Connellsville district has been the scene of many accidents and great loss of life.

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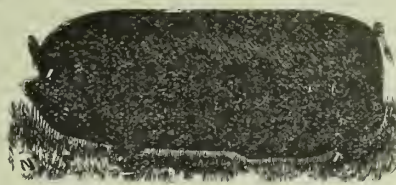


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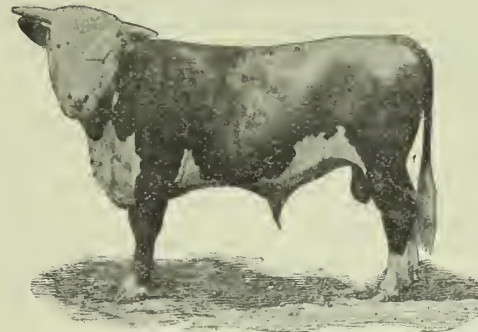
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List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR WEEK ENDING APRIL 12, 1898.

- 602,301.—PIPE SLITTER—A. J. Bramlette, Downey, Cal.
 602,065.—BED—T. H. Campbell, Seattle, Wash.
 602,153.—WINDMILL REGULATOR—W. P. H. Campbell, Stockton, Cal.
 602,209.—ROOF BRACKET—D. Cleland, Oakland, Cal.
 602,213.—POLISHING DEVICE—G. H. Dyer, S. F.
 602,130.—CARPENTER'S TOOL—B. Fuller, Sacramento, Cal.
 602,319.—WAGON BRAKE—J. A. Gilkey, Springfield, Or.
 602,161.—MOTIVE ENGINE—A. Howard, S. F.
 602,221.—CRUSHING MILL—H. L. Jensen, Watsonville, Cal.
 602,135.—PIANO—J. C. King, S. F.
 602,191.—DILATOR FOR FINGERS—R. A. Lucchesi, S. F.
 602,315.—FEED CUTTER—A. Mattijetz, Los Angeles, Cal.
 602,139.—RIVET MACHINE—L. E. Miller, Los Angeles, Cal.
 602,170.—AIR VALVE—E. A. Rix, S. F.
 602,144.—LOCK—W. D. Roberts, Portland, Or.
 602,198.—COMPRESSED AIR HAMMER—J. Schmidt, Rio Vista, Cal.
 602,145.—HAY RAKE—R. A. Simpson, Florence, Cal.
 28,468.—DESIGN—W. E. Gregory, Astoria, Or.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

BOTTLE.—Wm. Wilson, Oakland, Cal. No. 601,848. Dated April 5, 1898. This invention relates to improvements in bottles and is especially designed to prevent the fraudulent refilling of the bottle after its contents have been exhausted. It consists of an essentially cylindrical extension exterior to the neck of the bottle and in line therewith, means for opening and closing the end of said neck, a device upon one side of the extension exterior to the bottle neck through which liquid can be discharged when the neck has been opened, a means upon the opposite side for allowing air to enter to take the place of the discharged liquid, a means for closing the discharge aperture against any introduction of liquid through it, and means for closing the air inlet passage for similar purposes. This device consists of an automatic inwardly closing valve which controls an opening between the chamber in the upper part of the extension and the discharge passage so that liquid is prevented from entering through the discharge passage. There is also a second passage suitably arranged with relation to the first to allow air to enter and replace the discharged liquid and this passage has also a valve or diaphragm fixed in it which while it allows the ingress of air to replace the discharged liquid will arrest the passage inwardly of any liquid.

GRINDING AND POLISHING DEVICE.—George H. Dyer, San Francisco, Cal. No. 602,213. Dated April 12, 1898. The object of this invention is to provide an apparatus which is especially designed for grinding and polishing surfaces, and in a mechanism by which the apparatus can be moved from side to side, forward and back, tilted and generally adjusted to any surface or contour upon which it is desired to operate. It consists essentially of a suspending rod, a main frame having one end carried thereby, disks or grinders journaled and supported in the opposite end adapted to rest upon the surface to be ground or polished, a flexible driving belt and direction pulleys over which it passes, and through which power is transmitted to actuate the grinding disks and means to connect the carrying device with the frame and adjustable collars for varying the length and tension of the belt. Anti-frictional bearings are so disposed as to support the grinding disks and limit the cut as well as to insure its being leveled, and these devices have means for adjustment up or down. The main frame is also caused to oscillate transversely while being advanced so as to cause the grinders or cutters to work over a given amount of space while doing the work. The framework in which they are journaled may also be tilted or turned and adjusted so that the cutters will work upon any desired angle.

COMPRESSED AIR HAMMER.—Jacob Schmidt, Rio Vista, Cal. No. 602,198. Dated April 12, 1898. The object of this invention is to provide an apparatus in which the air can be first compressed to a high degree, then delivered suddenly into a cylinder having a plunger and connecting rod through which the hammer is actuated. The invention consists of a cylinder having a piston movable therein and a piston rod, the lower end of which carries a hammer, a second cylinder arranged with relation to and connecting through an open passage with the upper end of the first named cylinder, a plunger and mechanism by which it is reciprocated in the second cylinder to compress the air therein, a valve movable so as to retain the connecting passage closed until the air in the second cylinder has been compressed with the desired tension, connection between the valve and the crank shaft through which the compressing piston is actuated so that the valve is reciprocated to alternately close and open the passage. In conjunction with this is a discharge passage from the lower end of the hammer cylinder and a valve adjustable to intersect said passage to any desired degree so that a back pressure may be created in the lower part of the cylinder, and the force of the blow delivered by

the hammer and connected parts can thereby be regulated.

PORTABLE CRUSHING MILL.—Henry L. Jensen, Watsonville, Cal. No. 602,221. Dated April 12, 1898. The object of this invention is to provide an apparatus which is portable, and especially designed for crushing barley and other grains, a mechanism for communicating power to operate the same and means for the support and transportation of the combined mechanism. It consists essentially in the combination of crushing rolls with a means for actuating the same, an elevator casing having a discharge spout at one end, the regulating feed supply at the opposite end, a bucket elevator within the casing with means for actuating the same driven from one of the crushing rolls, an adjustable gate operating through the elevator discharge spout between the upper end of the elevator and the crushing rolls, so that the centrifugal impulse imparted by the elevator at its discharge end and the adjacent gate will regulate the supply to the rolls according to the speed of the elevator. The whole is mounted upon a wheeled base or support having a driving motor thereon and may be moved from place to place, it only being necessary to drive it up to the most convenient point for doing the work, and it will then operate to crush any small or large number of sacks of grain as may be required at a minimum of expense.

Coast Industrial Notes.

—Over 500 carloads of lemons will be shipped from California this season.

—The California Asphaltum Co. of Ventura county has shipped its first carload of sulphuric acid, containing thirty tons, to Los Angeles.

—The trip of the battleship Oregon from San Francisco around the Horn to the Atlantic coast is a great argument for the Nicaragua canal, built, owned and operated as a national measure.

—From San Bernardino county it is satisfactorily reported that the litigation which has practically tied up the Nevada Southern, sometimes called the California Eastern, has all been cleared away, and Gen. Mgr. Siebert now confidently expects to be able to build to Goode Springs this summer, a distance of fifty miles.

—Writing to the State Department of the shipment of 1,200,000 feet of lumber from Puget sound to Corea, Horace N. Allen, consul-general to Seoul, says: This is the first direct shipment of United States timber to Corea. It is for the use of the Seoul-Chemulpo railroad, now being rapidly built by United States capital. Ties for immediate use will have to be obtained from Japan.

—Coal discoveries and developments are numerous in California this month. In Lake county, near Lakeport, a 50-foot tunnel cuts four veins, one said to be 10 feet, which is doubtless an exaggeration. At a depth of 54 feet a small vein has been struck between Oakdale and Sonora. Near Cordelia a vein of soft coal is also reported uncovered. The Corral Hollow mines are producing a large quantity, which finds ready sale in San Francisco at \$6.50 per ton, retail.

—The Lumberman says the demand from South Africa for lumber from this coast has subsided. Two years ago Delagoa bay promised to buy large quantities and started in by purchasing a good many million feet. All at once shipments ceased. It was alleged that rumors of war between the Boers and English were depressing trade. Recently, however, shipments are being made from the Baltic, which are reported to be quite extensive. If this continues there should be missionary work and education carried on in Africa.

—The engineer's office of the War Department has sent to the California Board of Public Works permission for the prosecution of the river work under the State appropriation for the improvement of the Sacramento and San Joaquin rivers. Colonel MacKenzie, in charge of such work, has notified the California authorities that the carrying out of the plans for cut-offs 6 and 7 of the San Joaquin river will be in accord with the general plans of river improvement, and that the use of State forces to carry on the work will be agreeable to the National Government.

—The Manufacturers' and Producers' Association this week issued a statement showing comparative railway rates, east and west bound, on some leading Pacific coast products, many of which are shipped in large quantities from this coast. For instance: Agricultural implements, eastward, \$3.70; westward, \$2.40; cotton bales, eastward, \$3.30; westward, \$1; leather belting, eastward, \$2; westward, \$1; boots and shoes, \$3.40—\$1.50; butter in cans, \$2.40—\$1; canned salmon, \$1.70—\$1; green fruit, \$3.40—\$2.40. The large figures indicate the cost of freight from Pacific coast terminals to Chicago or New York; the smaller, the rates from those points to San Francisco. The traffic committee of the association reports: "The matter of discrimination and inequalities of freight rates

Deafness Cannot Be Cured

By local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces. We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars, free. F. J. CHENEY & CO., Toledo, O. Sold by Druggists, 75c. Hall's Family Pills are the best.

affecting the interests of the manufacturing and producing industries of the coast has claimed the attention of our association frequently during the past year, and the presentation of facts relating thereto is now brought before the managers of the transcontinental railroads with the belief that relief will be granted, and that fair play will be given to the Pacific coast industries. The Manufacturers' and Producers' Association of California represents over 500 of the leading manufacturers and distributors." A letter was sent to each member of the association, which says:

We beg to call your attention to the injustice and discrimination against the manufacturers and producers of California by excessive rates of freight at present in effect from San Francisco and other Pacific coast terminals east bound, as compared with the west bound rates on the same commodities from Chicago and New York to San Francisco and other Pacific coast terminals. Under existing conditions the manufacturers and producers of California are unfairly handicapped in their efforts to obtain a market for their products, as against the manufacturers and producers of Eastern States, on account of the great disparity of rates now existing on the same products east and west bound.

Your traffic committee has compiled a comparative statement, which we herewith inclose, showing the east and west bound transcontinental rates on some of the Pacific coast products. Taken generally, this statement shows the east bound rates to be from 10 to 100 per cent greater than west bound rates on the same commodities.

Our State stands well in the front ranks of the great producing States of the Union, not only as to products of the soil, but in its manufactures, and it is eminently unfair and unjust that we should not receive the same consideration at the hands of the transcontinental lines as is accorded the manufacturers and producers of Eastern States.

It is desired by your committee to add to the inclosed statement the rates of all commodities handled by our members, and we would ask each and every member to communicate with this committee, giving existing rates, yearly tonnage, etc., of such commodities as they are interested in, at the same time pointing out such inequalities as exist and suggesting what recommendation should be made.

It is of great importance that our members give this matter their immediate attention, as your committee will have to compile the data received and present our petition to the Transcontinental Freight Bureau, who meet at Milwaukee on May 10th next.

In order to secure a proper hearing and correction of the existing inequalities in existing transcontinental freight rates and classification, which, as at present constituted, work so disadvantageously to our Pacific coast interests, it is absolutely necessary that all manufacturers and producers of this State should stand firmly together, and by united effort, if necessary, the routing of all their freight, both east and west bound, over the line or lines that will give proper and reasonable consideration to our Pacific coast interests. We are confident that much can be accomplished toward securing an enlarged, profitable trade area for our Pacific coast manufacturers and producers.

In presenting our petition to the transcontinental roads we must give them absolute facts as to the tonnage east bound that now exists or can be created by reasonable rates on California products; hence the request to you that you inform us fully regarding your line of business, so that our petition will be comprehensive and accurate. Respectfully yours,

Edw. Everett, chairman; Frank L. Brown, W. F. Bowers, James W. Kerr, Charles R. Allen, J. A. Folger, C. P. Rossi, Traffic Committee.

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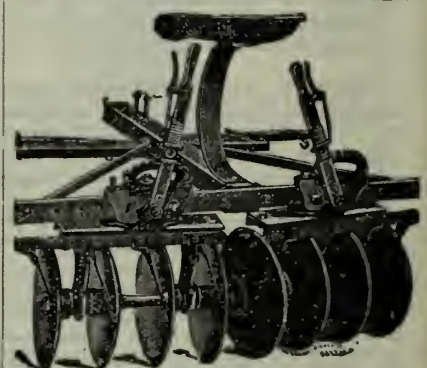
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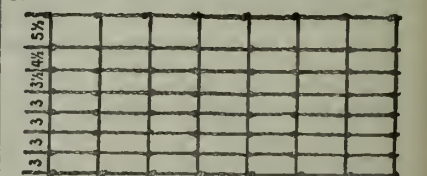
Eight thousand Roses, field-grown, two-year-old plants, have to be closed out. These consist of the best ever-blooming varieties, and will be sold at 10 plants for One Dollar, sent by express or delivered in the city of San Francisco. These Roses are in first-class condition and are bound to give satisfaction. No order filled for less than One Dollar. I name a few varieties, as space does not permit of the naming of the whole list: Aurora, Archduchess Marie Immaculata, Bon Seline, Bougere, Beauty of Stapleford, Cath. Mermet, Cheshnut Hybrid, La France, Caline Forrester, Cameo, Capt. Christy, C. Riza du Parc, Cecil Brunner, Duchesse de Brabant, Duchesse of Albany, Dr. Pasteur, Etiole de Lyon, Eliza Sauvage, Francisca Kruger, Gen. Dubola, Furstin Blismark, Gen. de Tartar, Jean Ducher, La Marque, Mad. Cochet, Desire, Falco, Hoste, Lam-bard, Schwallier, M. v. Houtte, Malmalson, Sunset, Queen, Papa Goutier, Rainbow, and a good many other varieties. F. LUTHELMAN, Pacific Nursery Baker and Lombard Sts., San Francisco, Cal.



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S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, April 27, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|-------------------|--------------------|
| Wednesday..... | \$1 10 @ 1 10 1/4 | \$ 89 1/4 @ 87 3/4 |
| Thursday..... | 1 10 @ 1 12 | 87 1/4 @ 89 1/4 |
| Friday..... | 1 12 1/4 @ 1 14 | 89 1/4 @ 88 3/4 |
| Saturday..... | 1 13 @ 1 14 | 87 1/4 @ 89 3/4 |
| Monday..... | 1 15 @ 1 20 | 90 1/4 @ 93 |
| Tuesday..... | 1 23 1/4 @ 1 23 | 95 1/4 @ 93 3/4 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|------------|------------|
| Wednesday..... | 8s 0 1/2 d | 7s 11 d |
| Thursday..... | 8s 0 1/2 d | 7s 11 d |
| Friday..... | 8s 3 1/2 d | 8s 0 1/2 d |
| Saturday..... | 8s 4 d | 8s 0 1/2 d |
| Monday..... | 8s 8 1/2 d | 8s 6 d |
| Tuesday..... | 9s 0 1/2 d | 8s 11 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|---------------------|-----------------------|
| Thursday..... | \$1 63 1/4 @ 1 65 | \$1 50 1/4 @ 1 62 1/4 |
| Friday..... | 1 69 @ 1 71 | 1 64 @ 1 66 1/4 |
| Saturday..... | 1 70 @ 1 73 | 1 65 1/4 @ 1 69 |
| Monday..... | 1 70 1/4 @ 1 81 1/4 | 1 75 1/4 @ 1 78 1/4 |
| Tuesday..... | 1 89 @ 1 86 1/4 | 1 87 @ 1 79 1/4 |
| Wednesday..... | 1 80 @ 1 82 1/4 | 1 78 1/4 @ 1 80 1/4 |

Wheat.

Sharp and pronounced advances have been effected in the wheat market the current week, making the wheat pits of this country and Europe only secondary to the war with Spain in point of excitement. There has been a quotable advance of about 20c per cental in values of actual wheat, most of this advance having been effected Monday and Tuesday, although at close of latter day there was less strength than at opening, and to-day (Wednesday) the market is more pacific, with options at a spot 5@7c lower than yesterday, although spot values remain quotably much the same as on previous day. On Call Board there was an advance of 26c within the week, and 20c in two days, but a portion of this—about 7 1/2c—was as speedily lost as it was gained. In Chicago, May wheat advanced about 14c per bushel and July about 7c. Liverpool futures made some rapid strides upward, aggregating fully 25c per cental for the week, but Liverpool prices are still below the parity of those nominally current here. Several causes have combined to bring about the higher and excited market, aside from the local dry weather conditions. A reported shortage in Russia and an anxiety to get as much American wheat as possible to Europe before the war with Spain assumes more serious phases were the prime factors in the upward movement. The scare among speculative operators who were on the wrong side of the market, and who rushed to get in under cover, also contributed greatly to the boom.

Considering the dry season, the light supplies of wheat now available for shipment, and the few deep-sea ships in port, either engaged or disengaged, April has made a good record in the matter of wheat exports from San Francisco. Up to this writing, Wednesday, the 27th inst., nine wheat cargoes have cleared from this port since the 1st inst., seven of the vessels having sailed for Europe, one for Chile and one for Cape Town, South Africa. The outward movement for the current month is particularly noteworthy, when compared with a year ago, when there was scarcity of neither wheat nor ships; but only four ships departed from this port with wheat cargoes during the month of April, 1897, being less than half the quantity for the month now closing, both in the number of vessels and in the volume of wheat. When it comes to value, the balance in favor of the current year is still greater. As for April, 1897, the wheat shipments from San Francisco had a clearance valuation of only \$255,000, while for the present month the aggregate value of wheat exports from this center is \$680,000. The coming month must make a light showing, however, in outward wheat movement, as there are only three ships now on the engaged list which are available for carrying grain. Of the three engaged, one is for London, one for South America and one for South Africa. Ocean freight rates are nominally 17s 6d per ton for iron ships to Cork, U. K., for orders, with the usual option of European ports, an unusually low figure.

California Milling.....\$1 80 @ 1 87 1/4
Cal. No. 1 shipping, alongside..... 1 75 @ 1 80
Oregon Valley..... 1 75 @ 1 80
Walla Walla Blue Stem..... 1 75 @ 1 85
Walla Walla Club..... 1 70 @ 1 80

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 white wheat per cental for the week were as follows for the options named:

May, 1898, delivery, \$1.63 1/4 @ 1.89.
December, 1898, delivery, \$1.59 1/4 @ 1.87.
Wednesday, at regular noon session of Call Board, May wheat sold at \$1.80 @ 1.82 1/4; December, 1898, \$1.78 1/4 @ 1.80 1/4.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|-----------------------|-----------------------|
| Liv. quotations..... | 6s 5 1/2 d @ 6s 6 d | 9s 0 d @ 9s 2 1/4 d |
| Freight rates..... | 17 1/4 @ —s | 17 1/4 @ 18 1/4 s |
| Local market..... | \$1.27 1/4 @ 1.32 1/4 | \$1.77 1/4 @ 1.82 1/4 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

Market is higher. The local mills advanced card quotations 25c per barrel at the close of last week, and another 25c per barrel on Tuesday. While there is little or no business doing in a regular way at the extreme figures quoted by the local milling combine,

transfers have been made at the top prices quoted prior to the last mark up, and the securing of these figures was not possible a few days ago. There is a very healthy tone to the market, with no heavy spot supplies.

Superfine, lower grades.....\$3 75 @ 3 90
Superfine, good to choice..... 4 00 @ 4 25
Country grades, extras..... 5 25 @ 5 50
Choice and extra choice..... 5 50 @ 5 65
Fancy brands, jobbing..... 5 55 @ 5 85
Oregon, Bakers' extra..... 5 25 @ 5 50
Walla Walla, Bakers' extra..... 5 25 @ 5 50

Barley.

While market for this cereal has not been particularly strong the current week, there was a partial recovery from the depression experienced just prior to close of last review. Most of the barley now offering is from Oregon and Washington, and the quantity of these imports is not heavy in the aggregate. There are no large amounts required, however, to satisfy the demand at the comparatively stiff prices which have been lately asked. Other feed cereals are obtainable at lower figures, and are in consequence diverting considerable trade from barley. Oats were a year ago selling 50 per cent above the price of barley, and were not considered abnormally high. To-day choice oats are not commanding 10 per cent above the price of No. 1 feed barley. Business in barley is mainly in feed descriptions. Brewers have been fighting shy of the market since values have been at dry-season levels. Bids lately on Brewing barley have been little if any higher than prices demanded for bright feed. Market for feed barley at close was slow and rather weak.

Feed, No. 1 to choice.....1 35 @ 1 37 1/4
Feed, fair to good..... 1 32 1/4 @ 1 35
Brewing, No. 1 to choice..... 1 40 @ 1 45
Chevalier, No. 1 to choice..... — @ —
Chevalier, No. 2..... — @ —

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

May, 1898, delivery, \$1.34 1/4 @ 1.37 1/4.
December, 1898, delivery, \$1.32 @ 1.39.
Wednesday, at regular noon session of the Call Board May, 1898, feed sold at \$1.34 @ 1.34 1/4; Dec., 1898, \$1.30 1/4 @ 1.33.

Oats.

Market has been ruling quiet, with tendency to a lower range of values than lately current. In quotable values, however, there are no pronounced changes to record. There is a very fair inquiry for both Feed and Milling descriptions, and it is the exception where buyers are able to obtain very great concessions from full current rates. Any changes in values in the near future are more apt to be to firmer than to easier figures. Present stocks are made up almost wholly of Oregon and Washington oats.

White Oats, fancy feed.....1 40 @ 1 42 1/4
White, good to choice..... 1 35 @ 1 37 1/4
White, poor to fair..... 1 30 @ 1 32 1/4
Gray, common to choice..... 1 32 1/4 @ 1 40
Milling..... 1 35 @ 1 40
Surprise, good to choice..... 1 40 @ 1 45
Black Russian..... — @ —
Red..... — @ —

Corn.

An easy market is noted for Eastern corn, which is being laid down in liberal quantity from Nebraska at a freight rate of \$11 per ton, making the corn cost here in bulk about \$1.02 1/4 per cental. Sacking makes an additional expense of about 5c per cental. Domestic product is offering lightly and is held at higher figures than imported. Especially are asking rates for Small Yellow and Large White at a higher range than for Eastern mixed, but the first named varieties are not receiving much attention.

Large White, good to choice.....1 15 @ 1 20
Large Yellow..... 1 10 @ 1 15
Small Yellow..... 1 25 @ 1 27 1/4
Eastern Yellow..... 1 05 @ 1 10
Egyptian White..... — @ —
Popcorn, shelled, 1 lb..... — @ —

Rye.

Market is a little better supplied than for some weeks past, but is fully as firm as previously quoted. Offerings are not being crowded to sale.

Good to choice, new..... 1 37 1/4 @ 1 40

Buckwheat.

In the absence of noteworthy transfers values are poorly defined, but desirable qualities could be placed to very fair advantage, the market ruling against buyers.

Good to choice.....1 80 @ 1 85
Sliverskin..... — @ —

Beans.

There is a fairly liberal movement, both for shipment and on local account. Market is firm throughout, with tendency on most varieties of white beans to slightly higher prices than have been lately ruling. As there is every indication that the yield this year will be far below the average, and as spot supplies are light, prospects are favorable for still firmer figures ruling, especially for Limas, Small and Large White, or Lady Washington, and Pea beans. Values for these kinds are not yet on what can be termed a high plane. Blackeye beans are scarce and are being held at stiff prices. Business in Bayos, Pinks and Reds is much lighter than in white descriptions.

Pea, fair to good, 100 lbs..... 1 65 @ 1 70
Small White, good to choice..... 1 75 @ 1 80
Lady Washington..... 1 75 @ 1 80
Butter, small..... 1 45 @ 1 55
Butter, large..... 1 60 @ 1 75
Pinks..... 2 65 @ 2 75
Bayos, good to choice..... 2 85 @ 3 00
Reds..... 2 15 @ 2 30
Red Kidneys..... 2 50 @ 2 65
Limas, good to choice..... 2 50 @ 2 65
Black-eye Beans..... 3 15 @ 3 25
Horse Beans..... 1 20 @ 1 30
Garbanzos, large..... 2 75 @ 3 00
Garbanzos, small..... 1 60 @ 1 75

Advices from New York by mail of late date give the following review of the bean market in the East, prices being per bushel of 60 lbs:

Aside from small white beans which have made some advance, the market has shown only slight

changes during the week. Receipts have fallen off quite materially, and advices indicate that farmers are busy with their spring work and in no hurry to market their beans. This tends to make a feeling of some confidence among dealers, both here and in the country. General trade has continued slow. Jobbers have bought cautiously, and the very unsettled condition of Cuban affairs has seriously interfered with export business. One of the steamers that sailed on Thursday for Havana took out several hundred barrels of Marrow, mostly bought on Saturday and Monday at \$1.40 f. o. b., but other orders have since been canceled. There is quite a steady holding, however, and it is a little more difficult to get the best stock at our inside quotation. Pea sold at \$1.05 early in the week, then at \$1.07, and later at \$1.10, that being the closing price, with the market rather firm; the strength comes as much from the reserved offerings as from an improved demand. Medium have advanced to \$1.10 on actual sales, and some holders are now asking more. Very little doing in Red Kidney, but there is a steady feeling on the basis of \$1.67 1/4 @ 1.70 for choice stock. White Kidney quiet and a shade easier. Turtle Soup not plenty, but seldom inquired for. Rather more Yellow eye offering and prices a little easier. Lima have moved out only on jobbing orders, and such sales have been made at \$1.57 1/4 @ 1.60. Green peas remain quiet and no more than steady, but Scotch are not offering at all freely and it is difficult to buy bags below 85c.

Dried Peas.

Niles Peas are scarce and are salable at nearly the same figures as Green dried. Millers are now drawing supplies of the latter mainly from the East.

Green Peas, California.....\$1 85 @ 1 90
Niles Peas..... 1 75 @ 1 80

Wool.

The market is dragging as badly as previously noted, there being no disposition on the part of either Eastern or local operators to do any purchasing at present. Manufacturers offer as an excuse for not putting in bids their inability to secure money accommodations on favorable terms, owing to the war now in progress with Spain. Local scourers are out of the market, having no clearly cut ideas of values. It is to be hoped that something will take place in the near future to break the existing monotony and enable the giving of quotations.

SPRING.

Oregon Eastern, choice.....12 @ 14
Oregon Eastern, fair to good..... 10 @ 11

FALL.

Northern, free.....11 @ 13
Southern Mountain..... 9 @ 12

Hops.

There is little or no effort being made in this center to purchase bops of any description. Supplies are of rather light volume, especially of desirable qualities, but they are likely to prove more than ample for all probable requirements during the balance of the season. Unless serious damage to the coming crop should develop, values for 1897 bops are not likely to record any improvement.

Good to choice, 1897 crop..... 11 @ 14

An Eastern authority, commenting on the bop market, has this to say under recent date, according to mail advices from New York:

Nearly 600 bales of Pacific coast hops have arrived this week on through hills of lading for London, part of which will not be shipped until next week. These were mostly low-grade Oregon, for which there is a poor market in this country, and we are inclined to think that they will receive a cold reception on the other side of the Atlantic. It would seem to be unfortunate that this poor moldy stock is sent abroad; it tends to prejudice the English buyers against our hops, and we are fearful that it will operate against future business in the Oregon hops. Some of these low grade goods have been forced to sale on this market during the week at 8@11c, and while the quality gives poor satisfaction to brewers, the fact of sales being made at such low figures tends to weaken the value of better goods. It has, therefore, been necessary to further reduce quotations. Outside of the old stock the bulk of the offerings are nominally worth about 12@15c, but prime and choice lots of both State and Pacific are held at 16@17c, and when buyers want them they have to pay those rates.

Hay and Straw.

As indicated in last issue would likely be the case, a decidedly easier market is being experienced for hay, due to importations from the East being offered at much lower figures than have been current for some time past, or than are still current for the home article. Eastern Timothy hay of prime quality can now be laid down here in carload lots at a cost of about \$15 per ton. When this Eastern hay becomes more generally known, it will undoubtedly be substituted to a great extent for the local product. Importations give promise of proving quite liberal during the next few months. Straw is scarce and high. It has been lately used considerably in mixing with hay.

Wheat.....21 00 @ 25 00
Wheat and Oat.....20 00 @ 24 00
Oat.....18 00 @ 22 00
Barley.....18 00 @ 22 00
Clover..... — @ —
Stock Hay..... — @ —
Alfalfa.....15 00 @ 17 00
Compressed.....21 00 @ 25 00
Straw, 1/2 bale..... 75 @ 1 00

Millstuffs.

This market as a whole has presented an easier tone than during preceding week, supplies proving more liberal as compared with the demand. Bran and Middlings were obtainable at a moderate decline from rates last quoted. Milled Corn was quotably lower. Values for Rolled Barley ruled moderately firm.

Bran, 1/2 ton.....20 00 @ 21 00
Middlings.....22 00 @ 25 00
Barley, Rolled.....29 50 @ 30 00
Cornmeal.....24 50 @ 25 00
Cracked Corn.....25 00 @ 25 50

Seeds.

A sailing vessel clearing for New York the past week carried 49 tons Mustard Seed. There is little now offering and poor prospects for coming crop. Values remain nominally as previously noted. Flaxseed is in light supply and is being firmly held. Alfalfa is neglected; quotations for the same are based on asking figures. Other seeds are ruling quiet.

Per ctt.
Mustard, Yellow.....2 75 @ 3 00

Mustard, Trieste Seed.....2 90 @ 3 10
Mustard, Wild Brown.....2 00 @ 2 25
Flax.....2 25 @ —

Canary.....Per lb.
Rape.....2 1/4 @ 2 1/2
Hemp.....2 1/4 @ 2 3/4
Alfalfa, Utah.....4 @ 6

Bags and Bagging.

The Grain Bag market presents no new or noteworthy feature. There is no inquiry from any quarter and none anticipated before harvest time. There is naturally a weak feeling, but there are no changes to record in quotations. Wool Sacks are offering at same rates last quoted, and there is not much doing in them. Business in other Bags and Bagging is light and within range of unchanged values.

Calcutta Grain bags, huyer July..... — @ —
Calcutta Grain bags, 22x36, spot..... 5 1/4 @ 5 1/2
State Prison bags, per 100..... 5 30 @ —
Wool sacks, 4 lb..... 30 @ —
Wool sacks, 3 1/2 lb..... 27 @ —
Gunnies.....10 @ —
Bean bags.....4 1/4 @ 4 1/2
Fruit sacks, cotton..... 5 1/4 @ 5 1/2

Hides, Pelts and Tallow.

No changes have occurred in quotable prices or the general tone of the Hide market since last review. Pelts have been coming forward rather freely and tendency was to lower figures. Tallow was in fair request at former range of values.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, bald slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|------------------------------------|-------------|-------------|
| Heavy Steers, over 56 lbs.... | — @ 10 | — @ 9 |
| Medium Steers, 48 to 56 lbs.... | — @ 9 | — @ 8 |
| Light Steers, under 48 lbs.... | — @ 8 1/2 | — @ 7 1/2 |
| Heavy Cow Hides, over 50 lbs.... | — @ 9 | — @ 8 |
| Light Cow Hides, under 50 lbs.... | — @ 8 1/2 | — @ 7 1/2 |
| Wet Salted Kip..... | — @ 9 1/2 | — @ 8 1/2 |
| Wet Salted Veal..... | — @ 10 | — @ 9 |
| Wet Salted Calf..... | — @ 10 | — @ 9 |
| Dry Hides..... | — @ 16 1/2 | 13 @ 13 1/2 |
| Dry Kip and Veal, 11 to 16 lbs.... | 16 @ 16 1/2 | — @ 12 |
| Dry Calf, under 4 lbs.... | 18 @ 20 | 16 @ 17 |
| Horse Hides, large..... | 2 25 @ 2 75 | — |
| Horse Hides, medium..... | 3 00 @ 2 25 | — |
| Horse Hides, small..... | 25 @ 50 | — |
| Colts' Hides..... | 25 @ 50 | — |
| Pelts, long wool, per skin..... | 90 @ 1 15 | — |
| Pelts, medium, per skin..... | 70 @ 80 | — |
| Pelts, short wool, per skin..... | 40 @ 60 | — |
| Pelts, shearing, per skin..... | 15 @ 30 | — |
| Deer Skins, best summer..... | 25 @ 30 | — |
| Deer Skins, good medium..... | — @ 20 | — |
| Deer Skins, thin winter..... | — @ 10 | — |
| Elk Hides..... | 10 @ 12 | — |
| Tallow, good quality..... | 3 @ 3 1/2 | — |
| Tallow, No. 2..... | 2 @ 2 1/2 | — |
| Goat Skins, perfect..... | 30 @ 37 1/2 | — |
| Goat Skins, damaged..... | 10 @ 20 | — |
| Kid Skins..... | 5 @ 10 | — |

Honey.

Market shows a healthy tone, especially for Extracted, with very little of this class now remaining. Comb continues obtainable at former rates, with a fair business doing on local account. There will be little honey the coming season, and it is probable that values will further harden.

Extracted, White Liquid..... 5 1/4 @ 6
Extracted, Light Amber..... 4 1/4 @ 5 1/4
White Comb, 1-lb frames..... 8 1/4 @ 10
Amber Comb..... 6 1/4 @ 7 1/4

Beeswax.

Market is lightly stocked and is not favorable to the buying interest. Demand at present, however, is hardly so active as it was earlier in the season.

Fair to choice, 1 lb.....24 @ 26

Live Stock and Meats.

Condition of the beef market continued against sellers, being slow and weak in tone, especially for other than most select. Mutton was in much the same liberal supply as for several weeks preceding and market lacked firmness. Hog market was weak for small and soft, with a large proportion of arrivals of these sorts. Hard hogs of medium to large size sold fairly well, medium receiving the preference.

Beef, 1st quality, dressed, net 1 lb..... 6 @ —
Beef, 2d quality..... 5 @ 5 1/4
Beef, 3d quality..... 4 @ 5
Mutton—ewes, 7 1/2 @ 8c; wethers..... 8 @ —
Hogs, hard grain fed, medium..... 3 1/2 @ 4
Hogs, small..... 3 1/4 @ 3
Hogs, large hard..... 3 1/2 @ 3 3/4
Hogs, soft and feeders..... 2 1/4 @ 2 1/2
Hogs, country dressed..... 4 1/4 @ 4 3/4
Veal, small, 1 lb..... 4 @ 6
Veal, large, 1 lb..... 4 @ 6
Lamb, Yearling, 1 lb..... 8 @ 8 1/4
Lamb, Spring, 1 lb..... 8 @ 8 1/4

Poultry.

Market was not burdened with choice young fowls, large and fat, and such brought tolerably good figures, some of superior quality going above quotations. For most other kinds, however, the market tended against sellers. Old poultry had to be particularly desirable as to size and condition to sell promptly or bring anything like satisfactory prices. Very small young stock and common old dragged at low figures. There was a glut of very small chicks, not large enough to be termed broilers.

Turkeys, dressed, 1 lb..... — @ —
Turkeys, live hens, 1 lb..... 10 @ 11
Turkeys, live gobblers..... 10 @ 11
Hens, Cal., 1 doz..... 3 00 @ 4 00
Roosters, old..... 3 50 @ 4 00
Roosters, young, (full-grown)..... 7 50 @ 8 00
Fryers..... 5 50 @ 6 00
Broilers, large..... 4 00 @ 5 00
Broilers, small..... 2 00 @ 3 00
Ducks, young, 1 doz..... 4 00 @ 6 00
Ducks, old..... 3 00 @ 3 50
Geese, 1 pair..... 1 00 @ 1 25
Goslings, 1 pair..... 1 25 @ 2 25
Pigeons, Old, 1 doz..... 1 25 @ —
Pigeons Young..... 1 50 @ 1 75

Butter.

The market has suffered a relapse, which was to have been expected as a result of the rather sharp and unwarranted advance of the previous week. Shipping and packing orders, which had been the mainstay of the market, were cut off by the higher figures demanded. These remarks apply mainly to best qualities,

although tendency on cheaper grades was also to easier figures, with supplies of the latter on the increase. Common grades of Eastern butter and also oleomargarine are now being landed here, the latter mostly for export. Eastern creamery will soon be arriving in quotable quantity, as prices East are now lower than in this center.

| | |
|---------------------------------|----------|
| Creamery extras, # lb. | 20 @ |
| Creamery firsts. | 19 1/4 @ |
| Creamery seconds. | 19 @ |
| Dairy select. | 19 1/4 @ |
| Dairy seconds. | 18 1/4 @ |
| Dairy, soft and weedy. | 18 @ |
| Mixed store. | 16 @ |
| Creamery in tubs. | 20 @ |
| Pickled roll. | 16 @ |
| Dairy in tubs. | 19 @ |
| Firkin, Cal., choice to select. | 19 @ |
| Firkin, common to fair. | 16 @ |

Cheese.

Values are being fairly well sustained for desirable qualities of all sizes. Small cheese, such as "Young Americas" and "stove-pipes," are in lighter stock as compared with the demand than are regular flats. Domestic cheddars are in slim supply, but demand for them is limited.

| | |
|-------------------------------|----------------|
| California fancy flat, new | 9 1/4 @ 10 1/4 |
| California, good to choice. | 9 @ 9 1/4 |
| California, fair to good. | 8 @ 9 |
| California Cheddar. | 10 @ 11 |
| California, "Young Americas." | 10 @ 11 |

Eggs.

This market shows no improvement. With large consumers running principally on Eastern eggs, and not much inquiry at recent rates for local product for packing, naturally not many eggs were required to satisfy the demand. There was a tendency to a little wider range in prices, but the divergence was mainly to lower figures for faulty qualities rather than to stiffer rates for choice. Values for choice stock will begin to advance, however, in the near future.

| | |
|---|----------|
| California, select, large white and fresh. | 13 1/4 @ |
| California, select, irregular color & size. | 12 1/4 @ |
| California, good to choice store. | 11 1/4 @ |
| California, common to fair store. | 10 @ |
| Oregon, prime. | 12 @ |
| Held Eastern, as to section and grading. | 12 1/4 @ |
| Local Cold storage eggs. | 12 @ |

Vegetables.

Receipts of spring vegetables in wholesale quantity continue to be confined mainly to Asparagus, Peas and Rhubarb. Prices for these have not fluctuated materially during the week, although the general drift of values was more favorable to producers than otherwise. Tomatoes were in fair supply for this time of year. String Beans, Cucumbers and Green Peppers made a moderate showing and brought as a rule good figures. Choice Yellow Onions were in light stock and firmly held. New Red Onions are not on market in quotable quantity and offerings so far have been of poor quality.

| | |
|------------------------------------|-------------|
| Asparagus, No. 1 to choice, # box. | 1 25 @ 1 75 |
| Asparagus, common to fair, # box. | 75 @ 1 00 |
| Beans, String, # lb. | 10 @ 15 |
| Beans, Lima, # lb. | 10 @ |
| Beans, Refugee, # lb. | 10 @ |
| Beans, Wax, # lb. | 15 @ 20 |
| Cabbage, choice garden, # 100. | 65 @ 75 |
| Cauliflower, # doz. | 50 @ |
| Corn, Green, # sack. | 10 @ |
| Corn, Alameda, # crate. | 10 @ |
| Cucumbers, hot house, # doz. | 40 @ 1 00 |
| Egg Plant, # lb. | 10 @ 12 1/2 |
| Garlic, # lb. | 10 @ |
| Mushrooms, Buttons, # lb. | 10 @ |
| Mushrooms, Wild, # lb. | 10 @ |
| Okra, Dried, # lb. | 12 1/2 @ 15 |
| Onions, Yellow, good to choice. | 2 50 @ 3 00 |
| Onions, Yellow, cut. | 1 25 @ 1 75 |
| Peas, Sweet, Garden, # lb. | 1 1/4 @ 2 |
| Peas, Sweet, # sack. | 75 @ 1 25 |
| Peppers, Green Chile, # lb. | 20 @ 25 |
| Rhubarb, ordinary, # box. | 25 @ 50 |
| Rhubarb, Mammoth, # bx. | 60 @ 70 |
| Squash, Summer, # lb. | 10 @ |
| Tomatoes, # box or crate. | 1 00 @ 1 50 |

Potatoes.

Markes showed steadiness for Old Potatoes desirable for table use, such as choice to select Burbank Seedlings, but for ordinary qualities the market was weak and dull, with plenty of the latter sort offering. Fair Oregon Burbanks were sold down to 50c, while choice brought 90c. New Potatoes inclined in favor of buyers, with receipts on the increase, but offerings included few of choice quality.

| | |
|--|---------------|
| Early Rose, River, # cental. | 60 @ 70 |
| Peerless, River. | 50 @ |
| Reds River. | 50 @ 60 |
| Garnet Chile, Mission. | 75 @ 1 15 |
| Burbanks, Salinas, # sack. | 50 @ 65 |
| Burbanks, River, # sack. | 50 @ 65 |
| Burbanks, Petaluma and Tomales, # cti. | 50 @ 75 |
| Burbanks, Humboldt, # cti. | 50 @ 75 |
| Burbanks, Oregon, # cental. | 55 @ 90 |
| Garnet Chile, Oregon. | 50 @ |
| New Potatoes, # lb. | 3 1/2 @ 1 1/4 |
| Sweet River, # cental. | 10 @ |
| Sweet Merced. | 1 00 @ 1 35 |

The Fruit Market.

Fresh Fruits.

Early summer fruits, such as berries and cherries, are beginning to put in an appearance in noteworthy quantity. Strawberries are now making a very fair display, both as to volume and quality. Market is lower than last quoted, but such as are fully ripe and in every way desirable are still commanding very good prices. Blackberries arrived in small quantity, selling in a retail way at 15c per 1-lb basket. Gooseberries put in an appearance in very limited fashion, the initial shipments selling within range of 7c to 10c per pound, and could not be termed strictly choice. Cherries made a better display than previous week, but the improvement was more in quantity than quality. Choice to select were in good request at tolerably stiff figures, fine Black commanding 10c per pound. The first car of cherries for the season was shipped East from Sacramento yesterday. Apples of last year's crop were offered at generally unchanged rates, but there was little positive demand for other than select Pip-

plins, large and sound, which description was scarce.

| | |
|---|-------------|
| Apples, fancy, 4-tier, # box. | 1 25 @ 1 40 |
| Apples, choice, 4-tier, # box. | 75 @ 1 00 |
| Apples, fair to good, 50-lb box. | 50 @ 75 |
| Apples, common to fair, # box. | 25 @ 50 |
| Cherries, Black, fair to choice, # box. | 75 @ 1 25 |
| Cherries, White and Red, # box. | 37 1/2 @ 75 |
| Strawberries, Longworth, # chest. | 7 00 @ 9 00 |
| Strawberries, Large, # chest. | 5 50 @ 6 00 |

Dried Fruits.

The leading feature of the week in the market for cured and evaporated fruits is the continued active demand for prunes on Eastern account. Market has been not only active for this variety, but is firmer, quotable rates for all sizes but 40-50s showing an advance of fully 1/4c per pound. Not less than 100 carloads have gone outward in the past thirty days. There are probably not over 100 carloads now remaining in the Santa Clara valley, and not to exceed twenty-five carloads in the entire balance of the State. Regular assortments of the four sizes are now difficult to make up, owing to scarcity of the small sizes. All other fruits are ruling quiet, with values without appreciable changes; but were selling pressure to be exerted, lower figures would have to be accepted. Apricots were held about as last quoted, but demand for them was less eager than a week or two ago. Peach market appeared to be a little weak, still there was nothing to warrant reducing quotations. Apples were not in large stock, but were in poor request and tended against sellers. Pears and pitted plums are ruling steady, with very few offerings. The steamer sailing yesterday for British Columbia took 30,000 pounds dried fruit, mostly for Eastern points.

EVAPORATED OR BLEACHED.

| | |
|--|---------------|
| Apricots, Royal, in sacks, per lb. | 6 @ 7 |
| Apricots, Royal, fancy. | 7 1/4 @ 8 1/4 |
| Apricots, Moorpark. | 8 @ 10 |
| Apples, in boxes. | 6 1/4 @ 6 1/2 |
| Figs, fancy pressed. | 8 @ 10 |
| Nectarines, White. | 3 1/4 @ 4 |
| Nectarines, Red. | 3 1/4 @ 4 |
| Peaches, unpeeled, choice. | 4 @ 4 1/4 |
| Peaches, unpeeled, fancy. | 5 @ 6 |
| Peaches, peeled, in boxes. | 9 @ 12 |
| Pears, unpeeled Bartlett's, halved, fancy. | 7 @ |
| Pears, halved, unpeeled Bartlett's. | 4 1/4 @ 6 |
| Pears, quartered, unpeeled Bartlett's. | 4 @ 5 |
| Plums, peeled and sliced. | 4 @ 5 |
| Plums, pitted. | 4 @ 5 |
| Prunes, in sacks, 40-50's. | 4 1/2 @ 5 |
| 50-60's. | 3 1/4 @ 3 1/2 |
| 60-70's. | 3 1/4 @ 3 |
| 70-80's. | 2 1/4 @ 2 1/2 |
| 80-90's. | 2 1/4 @ 2 1/2 |
| 90-100's. | 2 @ 2 1/4 |

Above figures are on basis of 2 1/2 @ 2 3/4 for 4 sizes. Prunes in boxes, 1/4c higher for 25-lb boxes, 1/2c higher for 50-lb boxes.

| | |
|-----------------------------------|---------|
| 4 sizes Santa Claras and equal. | 2 1/2 @ |
| 4 sizes San Joaquin and Northern. | 2 1/4 @ |
| Prunes, Silver. | 4 @ 7 |

COMMON SUN-DRIED.

| | |
|---------------------|-----------|
| Apricots, ordinary. | 5 @ 6 |
| Apples, sliced. | 4 @ 4 1/4 |
| Apples, quartered. | 4 @ |
| Figs, Black. | 2 @ 3 1/4 |
| Figs, White. | 3 @ 4 |
| Peaches, unpeeled. | 3 1/4 @ 4 |
| Plums, unsplit. | 1 @ 1 1/4 |

The dried fruit market in the East is thus outlined by a New York contemporary, the report coming through by mail of a late date: As the season advances there is a little more pressure to move evaporated apples and with demand moderate market has ruled easier. Strictly prime are in some cases held fractionally higher than quoted, but 8c is all that can be depended upon, and top quotations for both choice and fancy are very extreme. Sun-dried quiet and outside figures extreme, though desirable stock is held with some confidence. Chops have been fairly sustained, though 4c extreme; bags could not be placed to any extent above 3 1/4c. Cores and skins have been held steadily at full late figures. Not much doing in small fruits, but supply light and prices remain unchanged, except cherries, which have had some sales higher. Apricots firm and favoring sellers in price. Peaches quiet; outside figures extreme. Prunes show no new feature.

| | |
|--|---------------|
| Apricots, Cal. Moorpark, 1897, per lb. | 8 @ 12 |
| Apricots, Cal. Royal, 1897, per lb. | 6 1/4 @ 8 1/4 |
| Peaches, Cal., 1897, peeled, per lb. | 10 @ 16 |
| Peaches, Cal., 1897, unpeeled, per lb. | 5 @ 9 |
| Pears, Cal., 1897, per lb. | 5 @ 10 |
| Prunes, Cal., 1897, per lb. | 3 @ 8 |

Raisins.

Market locally is dull and values are without change for the better. An occasional carload is going eastward from packing points at former range of values, but Eastern handlers are more anxious to secure consignments than they are to make purchases. Stocks are mostly in Eastern centers, and the business transpiring is confined mainly to the Atlantic side of the country.

F. O. B. FRESNO DELIVERY.

| | |
|----------------------------------|---------------|
| Imperial Clusters, per box. | 50 @ |
| Dehesa Clusters, per box. | 50 @ |
| Fancy Clusters, per box. | 50 @ |
| Boxes, London layers, 20-lb box. | 1 00 @ |
| (Usual advance for fractions.) | |
| Loose Muscatel, 4-crown, # lb. | 3 1/4 @ |
| Loose Muscatel, 3-crown. | 2 1/4 @ 2 1/2 |
| Loose Muscatel, 2-crown. | 1 1/4 @ 1 1/2 |
| Sultanas. | 3 @ 3 1/4 |
| Seedless Muscatel. | 1 1/2 @ 2 |
| Dried Grapes. | 1 @ 1 1/4 |

Citrus Fruits.

Oranges were in reduced supply and improved figures were realized, especially for Navel, the season for this variety having nearly ended. Seedlings of desirable quality were in fair request, with market firm at former figures. Lemon market showed additional strength, stocks being rather light, and there was no lack of inquiry for choice to select. Limes were held about as last quoted, with no large quantities offering.

| | |
|-----------------------------|-------------|
| Oranges—Navel # box. | 2 00 @ 3 00 |
| St. Michaels. | 1 50 @ 2 00 |
| Seedlings. | 75 @ 1 50 |
| Tangerines, half box. | — @ — |
| Lemons—Cal., select, # box. | 2 00 @ 2 25 |
| Cal., good to choice. | 1 25 @ 1 75 |
| Cal., common to good. | 75 @ 1 25 |
| Limes—Mexican, # box. | 4 00 @ 4 50 |
| Cal., small box. | 50 @ 75 |

Nuts.

Almond market is so slimly stocked that little more than nominal quotations can be given at this date. Walnuts are being held

about as last quoted, with no heavy supplies of choice. Market for peanuts of choice quality is inclining in favor of sellers.

| | |
|----------------------------------|-----------|
| California Almonds, paper shell. | 9 @ 10 |
| California Almonds, soft shell. | 6 @ 8 |
| California Almonds, hard shell. | 4 @ 4 1/4 |
| Walnuts White, paper shell. | 8 @ 9 |
| Walnuts White, soft shell. | 8 @ 9 |
| Walnuts White, Cal., standard. | 6 @ 7 |
| Chestnuts, Cal. Italian. | — @ — |
| Peanuts, Cal., fair to prime. | 4 @ 4 1/4 |
| Peanuts, Eastern hand-picked. | 5 @ 6 |
| Pine Nuts. | 7 @ 8 |

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|----------------|--------------------|----------------------|
| Flour, 4-sks. | 108,711 | 4,285,032 |
| Wheat, cts. | 233,795 | 9,739,717 |
| Barley, cts. | 52,012 | 4,288,131 |
| Oats, cts. | 14,875 | 597,539 |
| Corn, cts. | 9,012 | 278,020 |
| Rye, cts. | 2,830 | 38,718 |
| Beans, sks. | 7,315 | 522,921 |
| Potatoes, sks. | 16,640 | 972,879 |
| Onions, sks. | 570 | 94,386 |
| Hay, tons. | 1,505 | 109,321 |
| Wool, bales. | 2,526 | 61,042 |
| Hops, bales. | 180 | 8,542 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|-----------------|--------------------|----------------------|
| Flour, 4-sks. | 173,172 | 2,856,888 |
| Wheat, cts. | 98,201 | 9,489,098 |
| Barley, cts. | 34,936 | 2,877,691 |
| Oats, cts. | 1,475 | 16,684 |
| Corn, cts. | 1,776 | 36,744 |
| Beans, sks. | 1,406 | 289,362 |
| Hay, bales. | 2,307 | 72,321 |
| Wool, lbs. | 14,199,776 | 13,864,240 |
| Hops, lbs. | 62,441 | 1,303,789 |
| Honey, cases. | 32 | 7,143 |
| Potatoes, pkgs. | 901 | 178,635 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or

other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, April 27.—California dried fruits firm; other fruits steady. Evaporated apples, common, 7c @ 7 1/4c # lb.; prime wire tray, 8c; wood dried prime, 8 1/4c; choice, 8 1/2c; fancy, 9c @ 9 1/4c. Prunes, 3 1/4c @ 3 1/2c # lb. Apricots, Royal, 5 1/2c @ 5c; Moorpark, 8 1/4c @ 10c. Peaches, unpeeled, 7c @ 8c; peeled, 11c @ 14c.

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The Bravest Fight in Naval History.

(Continued from page 280.)

affairs below Dale, instead of quailing, with ready wit told the prisoners that the Serapis was just sinking, and their only hope lay in keeping the Bonhomme Richard afloat. At this the whole mob of them went to the pumps and to fighting the fire. They worked in gangs till they dropped from sheer exhaustion when other gangs took their places.

There was one of them—a captain of a captured ship—who did not believe the story. He climbed through the ports to the Serapis and told of the hopeless condition of the American crew. But his story was discredited because of an extraordinary occurrence on the Serapis. As the ships lay together the mainyard of the Bonhomme Richard stretched far over the main hatch of the Serapis. Noticing this fact, a bright marine in the maintop of the Bonhomme Richard took advantage of it. The marines in the tops had been of the utmost service in clearing the decks of the enemy already, but this man, with a leather bucket of hand grenades and a candle, climbed out on the mainyard until over the hatch of the Serapis, and then, securing his bucket to the sheet block, he began dropping the lighted grenades into her hold.

The hand grenade is a shell near the weight of a baseball. The first one he dropped exploded on a great heap of gun cartridges that had accumulated along the lower deck behind the guns. A tremendous explosion followed. Some twenty of the British were fairly blown to pieces. * * * The explosion also set the Serapis on fire.

That was the decisive moment of the battle. While the British had been disabling all but three or four of the guns on the upper deck of the Bonhomme Richard, the men in the tops of the Yankee ship and the murderous fire of the nine-pounders which Jones himself had worked, had gradually driven all the men off the upper deck of the Serapis. That Captain Pearson had escaped injury is a marvel, for he had with undaunted courage directed the battle from the quarterdeck. But as the smoke of the great explosion rose through his hatches, he found himself practically alone, while Jones, with a cocked pistol in hand, was rallying his men successfully to increase the fire of his upperdeck guns. Going to his flag that had been nailed to the mast, he tore it down with his own hands.

As soon as the flag was dragged down on the Serapis, John Paul Jones ordered Lieut. Richard Dale on board of her to take charge.

As he made his way aft he saw a solitary person leaning on the taffrail in a melancholy posture, his face resting upon his hands. It was Captain Pearson. He said to Dale:

"The ship has struck." While hurrying him on the Bonhomme Richard an officer came from below and observed to Captain Pearson that the ship alongside was going down.

"We have got three guns clear, sir, and they'll soon send her to the devil." The Captain replied:

"It's too late, sir. Call the men off. The ship has struck."

"I'll go below, sir, and call them off immediately," and he was about to descend when Dale, interfering, said:

"No, sir; if you please, you'll come on board with me."

The above is quoted from the British Journal of an old date. Dale was of the opinion that once that officer got below he would have disregarded the surrender; that he would have used the three guns to send the Bonhomme Richard "to the devil," as he had proposed to do. That he might have done so is not doubted.

And then came John Paul Jones to receive the sword of the defeated Pearson. According to the older accounts of this fight, Pearson said, as he handed his sword to his conqueror:

"It is painful to deliver up my sword to a man who has fought with a halter around his neck."

To this, it is said, Jones replied:

"Sir, you have fought like a hero,

and I make no doubt your sovereign will reward you in the most ample manner."

A brief statement of comparative strength of the two ships is essential. The Bonhomme Richard entered the fight with forty-two guns which could throw 557 pounds of projectiles at a discharge. The Serapis carried fifty, throwing 600 pounds. After the first broadside the Bonhomme Richard had no eighteen-pounders in action, while the Serapis had twenty. The crew of the American ship had been reduced to 304 by the drafts made in manning prizes, and of these no more than one-third were Americans. The Serapis carried 320, chiefly picked men. So effective had been the work of the crew of the Serapis that at the end of an hour any ordinary man would have surrendered the Bonhomme Richard, but John Paul Jones was of different character from ordinary men. With a tenacity of purpose that had never been surpassed, he continued the fight and won. The number of killed on each ship was forty-nine. The Serapis had sixty-eight wounded and the Bonhomme Richard sixty-seven, among whom were John Paul Jones himself and Richard Dale. Jones was hit in the head and the wound afterward seriously affected his eyes, but he said nothing about it in his report. Dale was wounded by a splinter during the fight, but did not even know it until after the fight was over. While sitting on the binnacle of the Serapis and giving orders to get her under way he found she did not move when her sails were full. He did not then know she was anchored. Jumping up to see what was the matter he fell at full length on the deck. His blood had cooled by this time and the wound disabled him then.

Of the treachery of Captain Landais a brief space will suffice, because, as already said, his disappointments while in the French service had made him partially insane. That he fired into the Bonhomme Richard was proved beyond any doubt.

To return to the story of what happened immediately after the conclusion of the battle between the Bonhomme Richard and the Serapis, the facts may best be given in the words of John Paul Jones himself. In his report he says:

"I had yet to enemies to encounter far more formidable than the britons, I mean fire and Water, the Serapis Was attacked only by the first, but B. h R. was assailed by both, there was five feet Water in the hold, and tho' it Was moderate from Explosion of so much gun powder, yet the three pumps that remained could with difficulty only keep the Water from gaining. the fire broke out in Various parts of the Ship in spite of all the Water that Could be thrown (immediately) to quench it, and at length broke out as low as the powder magazine and within a few inches of the powder. in that dilemma I took out the powder upon deck to be thrown overboard at the latest extremity, and it Was 10 O'clock A. M. the next day the 24 before the fire Was entirely extinguished. With respect to the Situation of the B. h R. the rudder Was cut Entirely off the stern frame and transom Were almost Entire Cut away, the timbers by the lower Deck, especially from the mainmast to the stern, being greatly decayed With age, were mangled beyond my power of description, and a person must have been an Eye Witness to form a Just idea of the tremendous scene of carnage, Wreck and Ruin that Every Where appeared. humanity cannot but Recoil from the prospect of such fatal consequences.

"After the Carpenters as well as Captain De Cottineau and other men of sense had well examined and Surveyed the Ship (which was not finished before 5 in the Evening) I found every person to be convinced that it was Impossible to keep the B. h R. afloat So as to reach a port if the Wind should increase, it being then only a very moderate breeze. I had but little time to remove my Wounded which now became unavoidable and which Was effected in the Course of the night and next morning. I was determined to keep the B. h R. afloat and, if possible, to bring her into port for that purpose

the first Lieutenant of the Pallas continued on board with a party of men to attend the pumps with boats in Waiting ready to take them on board in Case the water should gain on them too fast. the Wind augmented in the Night and the next day the 25, So that it was Impossible to prevent the good old ship from Sinking. they did not abandon her till after 9 o'clock. the Water was then up to the Lower deck, and a little after 10 I saw With inexpressible grief the last glimpse of the B. h R."

The Bonhomme Richard had gone into the fight with a great American ensign, four times as long as it was broad, floating in the breeze. It was shot away during the conflict, and lay floating over the stern for a time, but it was rescued. And when it was seen that the old ship was past saving the battle-torn flag was hoisted to its old place, and with that fluttering in the brisk air the famous old ship sank out of sight.—From "The History of Our Navy," by John R. Spears; Chas. Scribner's Sons, Publishers.

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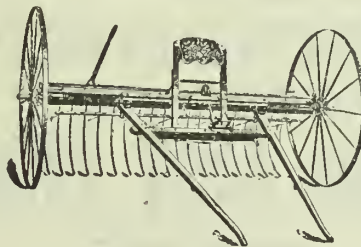
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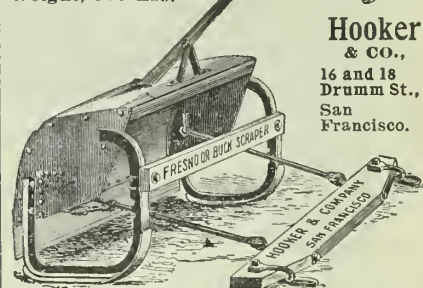
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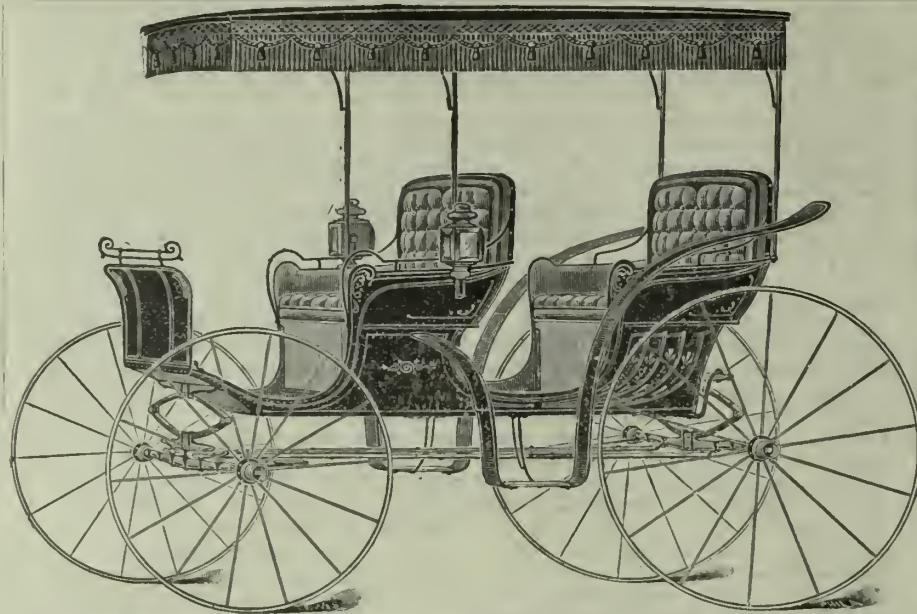
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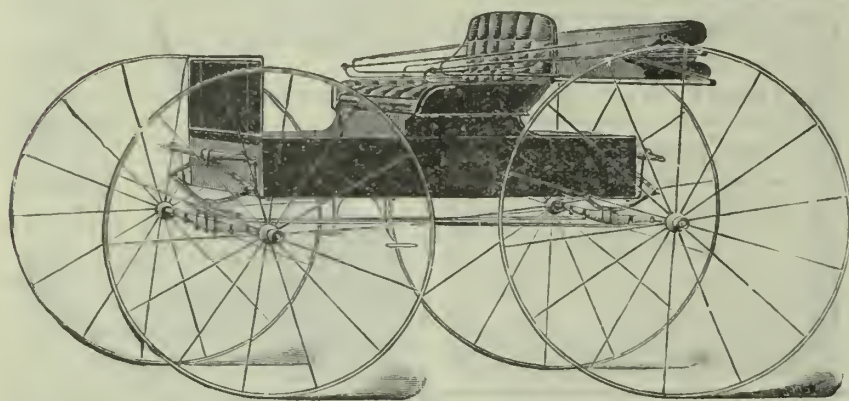
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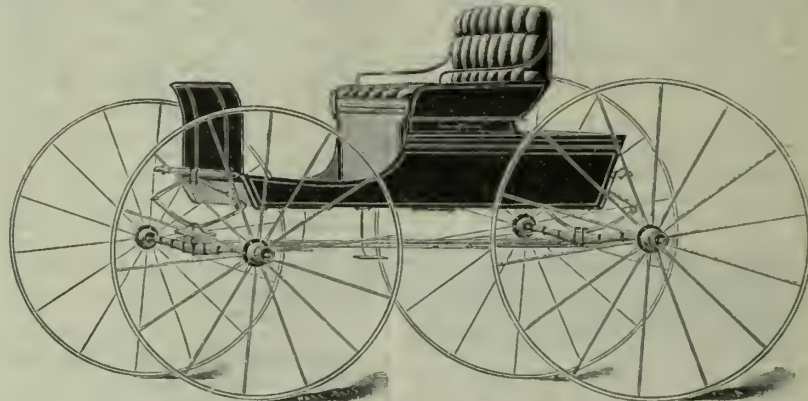


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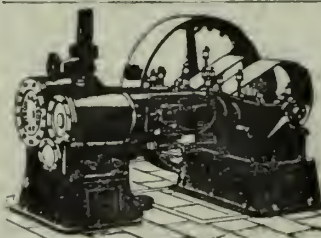
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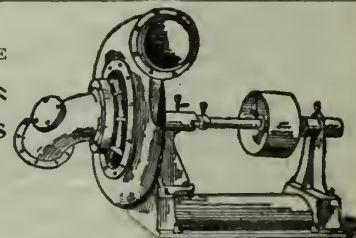
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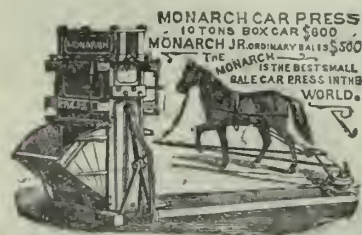
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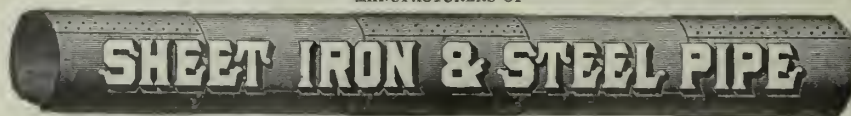
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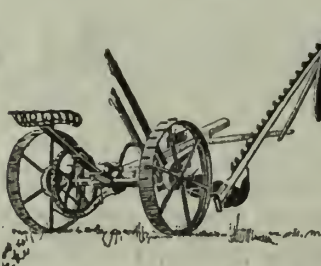
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Vol. LV. No. 19.

SAN FRANCISCO, SATURDAY, MAY 7, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

Modiola.

Our great forage plant alfalfa, though an old European plant, came to California from Chile with its Spanish name, which is now becoming its accepted designation all over the United States. Another forage plant with even more melodious name is *modiola*, also from the old Spanish country Chile, where it is native. *Modiola* comes not as a duly announced importation as alfalfa came, but it is an intruder, and how it reached the fields of Kern county, where it was found growing a few years ago, is not known.

The engraving shows a patch of the plant with a portrait of Mr. A. B. Leckenby, who found the plant growing thriftily on land quite beset by alkali, and, being struck by the fondness of animals for it, sent specimens to the University botanists, who identified it as *Modiola decumbens*. The plant may now be looked upon as a naturalized Californian, and it is achieving quite a creditable reputation. The University has distributed the seed for several years, and has received many letters from experimenters testifying to its resistance of drouth and alkali. Sheep eat it closely, and it seems as well fitted for horse feed as alfalfa and cows eat it in preference to alfalfa and improve in flow of milk. Analysis of the plant in the Station laboratory showed that it is almost as rich in flesh-forming ingredients as alfalfa. In this respect it is superior to the saltbushes. Judging from the Kern county observations, this plant may be valuable on dry and waste places, even when strongly alkaline; but the University has always recommended that it be introduced with caution, because it has a habit of rooting from its prostrate stems, and therefore may be very difficult to eradicate. In this respect it is very different from the saltbushes. They have advised its trial only in places which are remote from cultivated lands.

There is no idea that this plant will take the place of alfalfa. It is only advised to try it where alfalfa does not make satisfactory growth.

University Experiment Station Building.

We take the occasion of the issue of a new report of the work of the Agricultural Experiment Stations of the University of California to give our readers



MODIOLA—A NEWLY INTRODUCED FORAGE PLANT FROM CHILE, AS GROWING IN KERN COUNTY.

a view of the new agricultural building at Berkeley. The old building was burned about a year ago and with the greatest possible speed the agents proceeded with the erection of the structure shown on the photo-plate on this page. It has now been in use long enough to show that it is much better for its purpose than the building which it replaced. It is, in the first place, about one-half larger on the ground plan and somewhat higher as well. This enlargement was imperative because the old building was overcrowded and the enforced use of the attic for laboratory purposes had something to do with its burning. The new building gives larger laboratories and lecture rooms and more of them and affords many conveniences and facilities which were not found in the earlier structure.

As the picture shows, it is very plain in design and was constructed with the greatest economy, not only because the University needed so many buildings

last year, but because these buildings are expected to be replaced by structures of stone to endure for centuries as soon as the present plan to provide for their erection by private munificence is realized. The University has great hopes in this direction and the international competition for an acceptable plan, as provided for by the generosity of Regent Phebe A. Hearst, is now in progress.

While waiting for this realization the Agricultural Department of the University is very comfortably housed and provided for its work. The building impresses the visitor as being chiefly composed of windows and this is intentionally so, for nearly all the rooms on the side shown in the picture are for laboratory purposes. Chemistry, entomology and bacteriology are all pursued with the favorite north light, and to each of the windows of the upper floor table room is prepared for two pupils at each window, and it is a busy time for the bugs and the bacteria when the dozens of young men and women get their microscopes at work on the inside of this long row of windows. Most of the lecture rooms and offices and part of the laboratories, as well as the museum, are on the other side of the building, while the spacious attic has large reading rooms, a photograph gallery and storage rooms. Beneath this building are the experimental cellars, and in another building, not in the picture, is the olive laboratory.

An excellent review of the year's work of the agricultural college and experiment station is given in the report by Director Hilgard and his assistants, and any reader of the *RURAL* can get a copy without charge by applying by postal to the University at Berkeley. The University vacation will begin May 18th and continue for twelve weeks, but the Agricultural Department is in operation all the year and can be visited whenever any of our readers come down to escape the interior heat and enjoy the breezes around the bay.



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E. J. WICKSON..... Horticultural Editor.

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The Week.

The keenest activity prevails in California agricultural circles. Very few of our people are content to be depressed by the reverses which attend a dry year. On the other hand, they are putting forth every effort to triumph over unfavorable conditions, which is certainly the better way. Great as will be the disappointments and deprivations which will come to many—and the RURAL PRESS most profoundly sympathizes with them—there is the grandest opportunity to pluck up courage, and Californians are good at that. Everything is being done everywhere to get water upon land, and the cause of irrigation will win more converts this year than during a whole preceding generation. Summer crops will be secured this year in ways which people have hardly dreamed of, and the yields from the small individual areas, which can thus be made productive, will amount to a large aggregate.

There is also just now the greatest activity to secure food supplies for work stock at reasonable prices. Neighborhoods are combining to import hay and feed grains on the co-operative plan, and there will be a great saving thereby. The fact, too, that our fruit and dairy produce will this year command better than average prices will help many over the rough roads until generous rains bring in another of the good, old-style productive years of California. There is really every reason to look up and press forward.

The markets show also much activity this week. Wheat has dropped a little from the speculative local advance of last week, but the Eastern and foreign rates are well up and promising. Dairy prices seem too high to encourage packers in view of lower equivalents at the East, but there is not likely to be too much for consumptive demand at good figures. Dried fruit is strong and prunes have taken on $\frac{1}{2}$ @1c. Beans are also very strong and higher. Cattle are a little better and hogs suitable for packing are selling well, though stock hogs are slow owing to excessive offerings from regions of scant feed. Hay and millstuffs are affected by free imports from outside States and the coming in of new hay from our own fields. Potatoes and onions promise to be abundant and are depressed through the near approach of the new crop.

With the scarcity of hay in the Santa Clara valley, a great deal of timothy hay is being shipped in from Oregon and Nevada. Those who have used it are very much pleased with it as a feed.

Drouth and Fruit Trees.

We cannot too strongly enjoin upon our fruit-growing readers the necessity for extra care in orchard cultivation this year to lessen the distress of the trees and to avoid, if possible, injuries from which the trees may be long in recovering. It has been doubted if a dry season ever killed any trees in California. Fortunately, we have not had occasion for much observation on this point. It is twenty-one years since there was a very dry season, and the comparatively few fruit trees which we had at that date were, for the most part, on the deepest and most retentive soils. The vast extension of planting since that year has proceeded in large measure upon lands less adapted to retain moisture either by depth or character of soil or both. Then the dry year of 1877 followed the wet year of 1876, which had a rainfall nearly one-third greater than the average, while the rainfall last year was hardly above the average. Besides this, and which is even more significant, the drouth of 1877 followed spring rains of 5 $\frac{1}{2}$ inches in March and April, 1876, while our drouth of this year follows a spring which was almost rainless. This review shows not only that we have much less water in the soil to draw upon this year, but suggests another even worse fact: that the failure of last spring's rains left our orchards in a sorry condition as to cultivation, because people waited so long for rains which did not come. Our orchards, except in the irrigated regions, came to the first of September, 1897, with vastly less moisture than they had in September, 1876, and from all points of view will be subjected to greater trial this summer than fruit trees ever had in California since the American occupation.

Now, can these trees be saved without water? In almost all cases, yes; but in all except quite favorable situations it will take extra work this spring and summer to carry them through in promising shape. There may be difficulty in citing instances in which trees have actually perished from drouth, because we have not had drouths enough nor drouths so severe as the present in all our history. But it is not difficult to remember trees which have actually perished from neglect of moisture retention by proper cultivation. There are few districts which cannot supply their own instances of this kind. Of course, trees differ greatly in their endurance of hardship. Usually the peach yields first and the pear last, among the deciduous trees, and other fruits arrange themselves between these extremes. Now, if this occurs and trees actually disappear by neglect of cultivation in years of generous rainfall, it is very clear that there must be no neglect this year on lands not moistened by underflow, because it will take very good cultivation in many places this year to give the trees as much moisture as they would have left to their use by neglect in a wet year. There are many places where the subsoil is about as dry as it was last fall, and to allow evaporation to continue, by neglect of cultivation this spring and summer, is to place the trees in the greatest peril of their lives.

From the point of view of the life of the trees, it must be counted that the wide loss of the current fruit crop by frost was a decided gain. If there had been a full set of fruit with such a scanty water supply as we have this year on unirrigated orchards in most parts of the State, we should have seen hundreds of acres of trees with hardly sap enough to make foliage to cover the fruit and in a few weeks, in spite of the average amount of thinning, and sooner if not thinned, there would have been crops of prematurely ripened small and worthless fruit and trees either dying or surviving without effective buds for another year. So far as we can see, then, there can be no doubt that for many orchards the frost intervention will be the saving of the trees and for the ultimate advantage of the owners.

How long will drouth injuries endure? We have no personal observation on that point. It may be expected to be conditioned to some extent upon the kind of tree, for that fact seems to measure the depth and perhaps the endurance, also, of the injury. Evidently there is something to be apprehended, however, that present deprivations may leave an impress. We have just to hand a circular by L. A. Goodman of Westport, secretary of the

Missouri State Horticultural Society, in which he says:

The long drouth of last summer and fall caused more injury to our small fruit plantations than we thought at the time. A drouth of almost unprecedented length so weakened the vitality of the fruit plants and trees that we will see this injury showing during the whole of the year, in the failure to fully mature the crop the plants and trees have set.

The apple and peach trees which were so heavily loaded last year with a crop of fruit were badly injured by the drouth, and I fear that the effect will be shown in dying trees for the next few years. The enormous crop on some of our orchards has so sapped the vitality of the trees that it cannot but injure them. Help can be given by good care and cultivation during this year, and they may recover.

It is quite true that in regions of summer rains trees are more apt to be injured by drouth than in California, where their deeper-rooting habit gives them command of deeper moisture-strata. This accounts for the fact that our trees grow vigorously through six months of drouth, while Eastern and European trees are distressed by six weeks of it. But too much comfort must not be drawn from this fact in the present instance. Our trees succeed because our cultivation makes the lower soil-strata a reservoir of moisture, but, if for any reason these strata have no moisture to hold, distress to the tree must result.

To avoid this we return to the injunction with which we began: give the trees extra work this year. Make an effective earth mulch if teams and tools will do it. Save every drop of moisture that you can from surface evaporation. Destroy the weeds at once and then work at the surface with whatever tools will disintegrate it until you get a pulverized surface layer several inches in depth. Do not rely upon an inch or two of dust upon a hard layer. It will not usually prevent evaporation.

If the best work that can be done in this direction does not hold moisture enough to carry the foliage; if it curls in midsummer and the tree is seen to be in extreme distress, its life can often be saved by cutting back reasonably so as to reduce the evaporating surface. This is, of course, a last resort, and it is to be hoped that recourse to it will seldom be necessary.

We have written upon the supposition that water for irrigation cannot be had. A little water will work wonders if applied early enough. A few gallons and a mulch will save a young tree, and we doubt not a barrel of water applied in a deep trench and covered, after soaking away, with loose earth, might turn the tide for a good-sized tree. Of course, much more water is desirable, and it will probably be counted in the future, as one of the benefits of this dry year, that it forced so many to develop water and provide for its use in their deciduous orchards, as occasion may require.

Personal.

PROF. L. O. HOWARD, chief of the division of entomology of the Department of Agriculture at Washington, has been in California for a week actively engaged in pursuit of his specialty. He made personal investigation of the Mexican orange worm in its native haunts and then entered California by the southern route. Prof. Howard will make a tour of the entire Pacific coast before he returns to the East, and will spend several weeks in California, investigating the different species of fruit pests and the several parasites that have been introduced to suppress them. He will give attention to the longed-for blastophaga of the fig and expects that the Department will undertake its introduction from Smyrna.

MANY RURAL readers will hear with sincere regret of the death of Mr. I. N. Hoag of Redlands. He came to California in 1849 and lived for many years in the Sacramento valley. He was for ten years secretary of the State Agricultural Society and early in the seventies was an assistant editor of the PACIFIC RURAL PRESS. He was seventy-six years of age at his death, which resulted from pneumonia only one week after his assuming new duties as postmaster of Redlands.

DR. E. W. ALLEN, of the Office of Experiment Stations at Washington, is also in California examining the work of the establishments of the University of California and informing himself generally upon the agricultural industries of the State.

QUERIES AND REPLIES.

Sorghum Varieties for Summer Forage.

TO THE EDITOR:—Can I, by planting sorghum by the middle of May, raise a successful crop? I have plenty of water for irrigating and my soil is good quality (adobe). Which is the better feed for milch cows, sorghum or Egyptian corn? How long does it take sorghum to mature, i. e., how long before it is ready to cut for fodder? Can sorghum be cured for winter feed, and how should it be cured? When should sorghum be cut to be in proper shape for curing? Will I be able to get two crops this season? Where can I get sorghum seed? What quantity is required per acre? Shall I irrigate my land before planting seed, or not? In what condition would I be required to get my soil before planting? What system of irrigating would you advise, say that I put in about fifteen acres and get my water by pumping from artesian well.—STOCKMAN, Santa Clara, Cal.

You can plant sorghum at the middle of May or a month or more later than that on moist or irrigated ground. Egyptian corn is one of the sorghum family, and there are many others. What is known as Egyptian corn in this State is a sorghum which bends down its head, making a goose-neck stem. It succeeds best in the interior valleys, for it seems to need higher heat to make its best growth than the varieties which carry an upright head, like Kafir corn and Jerusalem corn. They also do well in the interior and thrive in the coast valleys with rather less heat. Early Amber sorghum and Orange sorghum are also adapted to both situations. In choice of varieties this year you have to be governed by what seed you can find in the market, for there has been a great run on seeds of all the sorghums, for they are, as a class, the most valuable forage plants for a dry year. The leading seedsmen of San Francisco can give you information on what varieties they can now supply.

Sorghum is ready to cut for green feed at any early stage of its growth, and one of the advantages of the plant is that it proceeds at once to make a second and third growth after cutting, and, in fact, will continue to sprout and grow until touched by the frost, if there is still moisture in the soil, and it will grow with less moisture than Indian corn or other similar plant. It is impossible to say how soon it will make a growth suitable to cut; that depends upon the heat (for it grows much faster in the interior than on the coast), and it depends, also, on how badly you need the feed to stop using high-priced hay. To get the most feed and in the best condition, however, it should be cut just after blooming and before the seeds are fully formed, because after that the stalks get hard and less nutritious. As already stated, you will get two, three or more cuts in the season.

As you have water available, it will be well to irrigate your land thoroughly by running water in furrows about 8 feet apart, until it has a good deep wetting and then, as soon as it works well, plow deeply and harrow very thoroughly so as to fill all air spaces which may be left by the flow in the furrow bottoms. Unless you are prepared to do some good four-horse harrowing, you had better not plow so deep, but the cost of the deep working will all come back in the crops, if it is well done, because the deep rooting of the sorghums is one of their strongest points of value. On such deeply worked soil you can put in sorghum seed at the rate of about thirty pounds per acre with an ordinary press grain drill (which is the best way), or you can sow about fifty pounds per acre broadcast and cover well with a disc harrow. This is the way sorghum is grown when it is to be cut for hay, because this close growing gives tender stems which will be eaten up cleanly by the stock.

This method of growing is, however, best adapted to loamy soils which are not disposed to bake on drying. On heavy soils it is usually better to sow in drills wide enough apart to admit of cultivation and then keep the ground stirred until the growth gets well up in the air. In laying off, run the rows so the water can be taken between them in a furrow and given a good irrigation and cultivation after each cutting. This will keep the plants growing vigorously until frost comes.

Sorghum for forage purposes can be best cut with a mowing machine, although it may of course be handled with any sort of a corn cutter, either by hand or with horses. If it is to be cut successively

for each day's feeding, probably a corn knife and hand cutting will do best.

In feeding sorghum green, be careful not to give the stock too much at first. Trouble is likely to come from turning quickly from dry feed to green sorghum. This is most likely to come from feeding the second growth. Let the stock have mixed green and dry feed and come gradually to the full feeding of sorghum.

Tuberless Potato Plants.

TO THE EDITOR:—Will you kindly inform me why my Irish potatoes grow well and look thrifty, yet never have any potatoes on them? The soil is rich and mellow and was irrigated before planting. I have been told by farmers who irrigated two and three times that they had the same luck, then again they would get a fine crop. How often should potatoes be irrigated, and should they be irrigated after they blossom?—W. B. CARTMILL, Tulare, Cal.

We have heard of this trouble before, but we do not know the cause of it. It is something apart from the irrigation, for potatoes are successfully grown by irrigation in all dry regions. It is best to get the ground thoroughly moistened before planting and make the crop by good cultivation alone, but it is not possible to do that except on soils which have some retentive quality. Again, it is not well to let the ground get very dry and then irrigate, for it starts a lot of new tubers which do not attain size. It is usually thought best not to irrigate after blooming, though it sometimes has to be done. Water must be applied often enough to keep the ground nicely moist until the tubers are well formed. We should like to hear from potato growers as to what they conceive to be the cause of the trouble.

Water Glass for Egg Preservation.

TO THE EDITOR:—Can the "official consular report" mentioned in article on "German Method of Preserving Eggs" (PRESS, April 16) be obtained? If not what is the method of preparing solution of water glass?—E. W. PUTMAN, Warm Springs.

The "Consular Reports" are published by the Department of State at Washington. The report to which our querist refers contains nothing more on the subject than was given in the RURAL. "Water glass" is a solution of sodium silicate. It is sold as liquid all ready for use by druggists. In quantities it can be bought for about 10 cents a quart. In treatment the egg is dipped in the liquid and allowed to dry and on drying the evaporation of the liquid leaves a deposit which closes the pores in the egg shell.

A Grass-Killing Parasite.

TO THE EDITOR:—You will find enclosed a branch of a weed which has lately made its appearance in our valley lands, and wherever it comes the grass disappears; but still it does not seem to grow thickly enough to choke out the grass, but acts more as though the soil was lacking something and it would serve as a warning. Many of our fields that have always been very productive of clover and rye grass are being covered with this, and at a distance it looks like moss, and comes on fields that have been newly seeded as well as old pastures. If you can give us any advice or remedy for it, it will greatly help our dairy interests.—C. E. SPEAR, Washington, Humboldt Co.

There is often much in the suggestion that the spread of a weed indicates soil deterioration, but we doubt if this truth has much applicability in this case. Our querist has to deal with an aggressive parasitic plant analogous to the dodder, which invades alfalfa. It is identified by Mr. J. Burt Davy of the University department of botany as *Orthocarpus pusillus*, which is a native of California, and parasitical on the roots of grass, alfalfa and such plants, killing them out as surely as dodder will kill clover. The plant is common in the State from San Francisco bay northward to Oregon. It is doubtful if there is any remedy on a large scale except plowing up and reseeding, and then keeping a sharp lookout and hoeing out the patches when they first appear in the spring, when they are easily noticeable by their red-brown color. This will prevent the plant seeding, and as it is an annual this method should prove a good check. It may be that a patch may be conveniently killed by burning a heap of straw upon it, as is sometimes done with dodder; but probably a thorough hoeing and scattering new grass or clover seed on the patch will be the quickest way to kill the parasite and get a new stand of pasture on the place.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 2, 1898.

Light showers fell during the last half of the week over the country south of the Tehachapi, and along the coast northward to San Luis Obispo. With the exception of light showers Monday and Tuesday in the extreme northwestern portion, the northern half of the State has had no rain, although the skies have been cloudy and at times threatening. The rain in the southern portion of the State is the first for five weeks, except at San Diego. The temperature has been nearly normal throughout the State, except in the northern portion of the Sacramento valley, where it has been warmer. The rain has greatly benefited crops in the south, improving pasturage. Some hay will be made. Many head of cattle have been moved from the south coast counties. Fruit trees are doing well and there are prospects for a heavy crop of cherries and apples. Vegetables are backward and small fruit only fair. Grapes are doing finely. In the Santa Clara valley orchardists are busy irrigating.

SHASTA.—Heavy north winds; very dry. Moving stock to mountain districts for feed.

GLENN.—Favorable weather for growing grain. Begin haying latter part of week; prospect of hay enough for home consumption.

BUTTE.—Olive trees nearly in bloom; will be heavy. Favorable for citrus trees. Feather river not rising from melting snow.

YOLO.—Pears dropping; peaches being thinned. Despite the drouth, fruit and trees making usual growth; prospects still favorable for fair crop.

SACRAMENTO.—Cool and showery. Barley on river lands will give good yield. Hop vines show want of moisture.

SOLANO.—Cutting hay; very short crop. Cool south winds beneficial to grain. Except almonds and apricots, fruit looking well and growing nicely. First carload of cherries shipped on 26th, nine days earlier than last year; heavy crop expected.

EL DORADO.—All crops looking better.

SAN JOAQUIN.—Light rain. Weather cool and favorable for grain.

STANISLAUS.—Dry and north winds. Crops inside canal limits look well.

MERCED.—North winds beginning of week. Some grain heading out and looks well. Prospect of harvesting some grain. Farmers more hopeful.

FRESNO.—Hay coming on; alfalfa making a good crop; grain nearly a complete failure; vineyards looking well; irrigating ditches full. Trace of rain Saturday night.

KINGS.—Cool and cloudy. No grain. Prunes falling. Some pears promise well. Vineyards looking well.

TULARE.—High southeasterly winds and sand storms. Showers Saturday night. Ditches running full. Fair prospect for grapes.

KERN.—Trace of rain Sunday; favorable weather for growing grain, nearly all of which will mature or at least make hay or feed; now cutting light crop of alfalfa. Crop of fruit will be light, except grapes.

LAKE.—Three degrees warmer on 24th than on any April day since 1885. In spite of absence of rain, crops are better than expected; yield will not be up to the average. Pasture, except around lakes, very poor. Grapes thrifty with much fruit. Apples heavy and good. Prunes good. Haying soon.

SONOMA.—Hay and grain progressing finely. Feed in the hills as good as usual. Peach crop light, but doing well. Prunes extra good and advancing rapidly; apple crop small, but doing well; berries late and small. Range stock looking better than usual.

NAPA.—Fair crop of grain and hay; fruit yield about three-quarters of a crop.

ALAMEDA.—Vegetables not doing so well as expected. Fruit doing well. Hay and grain not enough for home consumption. Some vineyardists pruning vines.

SAN MATEO.—Hay crop better in the foothills than in the valley; fruit doing well.

SANTA CLARA.—Continued dry weather. Sinking wells and pumping water day and night. No hope of hay or grain on land not irrigated. Cherry crop will be large, notwithstanding earlier discouraging reports. Beets growing nicely.

SANTA CRUZ.—Crops and feed fair, considering dry weather. Rain would do great good.

MONTEREY.—Cool and cloudy. No prospect of a crop except on foothills.

SAN BENITO.—No grain and little hay; feed dried up. Too late for rain to do good.

SAN LUIS OBISPO.—Peaches and apples doing well. Twenty thousand head of stock shipped out of county for lack of feed. Rain will help fruit considerably.

SANTA BARBARA.—Dry weather has injured all crops. Only a light crop of hay now looked for. Beans and summer crops will not be planted unless at least 1 inch of rain should fall. Apricots light crop. Showers on 26th.

VENTURA.—Boring 12 and 14-inch wells. Poor outlook for barley, beans and corn. Thousands of sheep and many horses shipped away for better pasture. Trace of rain.

LOS ANGELES (Bassett).—Good rain, but will do little good to grain; some hay will be made. (Duarte).—About 2 inches of rain, which has benefited all crops (Palmdale).—Continued drouth; little feed for stock. (Pomona).—Half-inch of rain, which has greatly benefited late barley and hay. (San Fernando).—Light rain at end of week; a great help to fruit, but too late for grain.

SAN BERNARDINO.—One inch of rain during week very beneficial.

ORANGE.—Light showers. Trees looking well. Hay crop short.

RIVERSIDE.—Extremely hot beginning of week, followed by copious showers. Rain too late to benefit grain or hay; orange crop for coming year very promising.

SAN DIEGO.—Rains having done much good, rendering irrigation of fruit unnecessary, improving hay and grain somewhat and greatly benefiting pasture.

EUREKA SUMMARY.—High northwest wind unfavorable for tender vegetation; prospects good, however, for an abundance of small fruit. Grain and grass looking well.

LOS ANGELES SUMMARY.—Rain too late for hay; will help corn, beans and alfalfa. Orange trees in good condition and full of bloom.

The following data for the week ending 5 A. M., Wednesday, May 4, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Last Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | .06 | 31.27 | 48.90 | 43.47 | 38 | 58 |
| Red Bluff..... | .00 | 12.30 | 24.15 | 24.40 | 48 | 86 |
| Sacramento..... | T | 8.87 | 17.26 | 19.96 | 46 | 86 |
| San Francisco..... | T | 7.75 | 22.60 | 22.63 | 46 | 60 |
| Fresno..... | .02 | 4.03 | 10.52 | 9.38 | 48 | 92 |
| San Luis Obispo..... | .11 | 6.16 | 20.71 | * | 44 | 84 |
| Los Angeles..... | .11 | 5.37 | 16.80 | 16.80 | 46 | 76 |
| San Diego..... | .28 | 4.46 | 11.69 | 10.28 | 52 | 62 |
| Yuma..... | .00 | 1.66 | 5.35 | 3.01 | 50 | 100 |

* No record.

THE DAIRY.

How to Increase the Profits of Dairying.

By WALTER C. COCKE, of Downey, before the Farmers' Institute, at Escondido.

"The profit of the dairy" is the very vitality upon which the business exists. It is the final result after which we strive; and that we may legitimately increase these "profits" is the perplexing question with which every true business man is wrestling.

I have no secret process to reveal, by which you can alchemize a good cow out of a bad one, neither have I any bright and promising theory to advance. The few suggestions I shall offer are based upon well tried plans and practical experiments; therefore, I have nothing new for the thoroughly progressive and wideawake dairyman, the man that reads the dairy paper, studies his business and takes lively interest in dairy conventions and farmers' clubs. I have culled my facts from the very same source to which he has already visited to see if there might be some new idea or suggestion that he could turn to a practical use.

The Backward Dairyman.—No! the man to whom I appeal belongs to that class which constitutes the great majority of that vast army whose chief dependence is in the dairy. The class that are so conspicuous for their absence at such meetings as these because they do not realize their importance. I appeal to the man that rises early and works late; who has a herd of cows averaging him anywhere from 135 to 180 pounds of butter a year, and who is trying by sheer brute force to work out the other 150 pounds that they should give and that the proper cows with proper care would give.

Must Think.—Now the very first change for this man to make is to take time to think; to read, and to study; to attend conventions and institutes. I do not mean to take time to talk politics and read the daily paper—do that if you can afford it, but the other is imperative to the man who will successfully contend against the closer competition of our growing civilization and stem the tide against the financial stringencies that are sure to come. In that one word "think," we have the keynote to the situation that can lift us to a pleasanter and more profitable business. Why do you pay the man who sits on the plow \$1 per day while you allow for the horse that does a hundred times more physical labor only 25 cents? Most certainly because of the brain power employed. Why do you pay an expert in any branch of industry from three to five times as much as his assistants who do as much or more physical labor? Most certainly because of his superior knowledge. And so it is on the farm, skill and knowledge count a great deal faster than brute force. The time has passed when the farmer has no need of an education. It takes more brains to run an up-to-date dairy farm than it does to run any grocery store in the country. It takes as much thought and study to master the fundamental principles of the dairy as it does to master the general principles of law. We have bright progressive men all over this country from the Atlantic to the Pacific, laboring under all the varying conditions of soil and climate, with all kinds of markets and all conditions of feed; men who not only take a pride in their dairies but who make them pay.

Of the Cost.—In one of the first dairies of southern California milk is produced at an expense for feed of 40 cents per 100 pounds, with an average test of better than 4 per cent. Mr. Jas. Boal tells me that while taking the milk to the creamery from his dairy of fifty cows after allowing a fair interest on the investment and paying all expenses, he found that he had realized \$10 per ton for his alfalfa hay as he fed it from the field.

A prominent Wisconsin dairyman writes that the entire cost of keeping a cow for a year, even with their severe winters, is only \$35, and that he realizes 6,000 pounds of 5 per cent milk per cow. While breadstuffs are materially cheaper there than here, yet when figured at the market prices here, it will not raise the total cost of keeping a cow to more than \$45, while with our average price of butter it would leave a profit of \$20 to \$25 per cow. Now these are only a few of the many progressive dairymen all over our country who, by reducing scientific and up-to-date theories to actual practice have secured the best results.

Of the Farm.—As I have studied the methods employed by these dairymen, I have been impressed with the striking similarity in the general principles that govern the action of these men. I shall endeavor to outline these principles as I see them in actual and successful practice. Now if we expect to belong to this progressive and thrifty class, the first thing that claims our attention is the farm.

The dairy farmer has two distinct branches or industries under his control, each one as distinct and separate from the other and requiring a knowledge as peculiar to itself as would a grocery store or a carpenter shop. I believe that fully one-half of the trouble or lack of profit attributed to the dairy really lies in the mismanagement of the farming

department. There is no margin enough in the dairy to cover a deficiency in the farm. It must be a success in itself. That is, the actual product of the farm at the market price must pay the entire cost of production, rent, taxes, interest, labor and other expenses incidental to farming. When it does not do this it is obviously better to give up the farm and buy the feed.

Succession of Crops.—The fact that one crop cannot be raised profitably on the same land for a number of consecutive years and that better results are obtained by the succession of some crops than of others, gives room for scientific research and practical experiment beyond the reach of the of the farmer. Even if he had the ability and patience to carry out a plan until he had reached some definite facts, it would only be after a very great expenditure of time and money. Experience is undoubtedly one of the best of teachers, but she is just as certainly one of the most expensive. There is a surer and less expensive way to reach these facts. A certain amount of experiment is necessary to overcome conditions peculiar to one's own circumstances and surroundings, but let it be done in all the light that can be had on the subject. We must learn to take advantage of the data from experiment stations. And should we not have one here, in southern California, well equipped, kept up by the State and under the management of some of our up-to-date men? It would pay us \$100 for every \$1 it cost. We need it because we have conditions here, in this glorious southern clime of ours, peculiar to ourselves. The proper cultivation of our land; how to irrigate and how to drain it; what crops are most profitable; how to reclaim our alkali lands, and how and what fertilizers to use; are some of the questions that are of vital importance to us, and in the right solution of them lies the difference between success and failure.

The Dairy Herd.—The next step to the successful dairy farm after the farm itself, is the selection of the dairy herd. The man who trusts to luck in the selection and breeding of his herd is very apt to make a failure of it and brand the business as unprofitable. What we need here, as in many other places, is to realize the utter worthlessness of a poor cow. It is quite within the truth to say that in many dairies one-third of the cows do not pay their board, another third do not more than pay for their keeping and make good this loss, while only the remaining third are real profit makers. Of all the reckless and inexcusable things that a dairyman can be guilty of, keeping no record of his individual cows, both as to quantity and quality, is the most inexcusable, for it involves very little extra time, no expense, and without it the improvement of the dairy herd is a practical impossibility.

About Breeds.—As to breeds, let me quote from Mr. Burchard, a successful Wisconsin dairyman, who made his cows average last year 342 pounds of butter per head, and finds dairying pleasant as well as profitable:

To begin with of course you want the cows, I care not whether you keep full bloods or not, it is of the utmost importance to get them strong in the blood of one of the decided dairy breeds. You never can make a success of dairying with a general purpose animal—by that I mean one that tends towards the beef type. Having cows of a distinctive dairy breed, the next and of fully as much importance, is the dairy bull. Whether you have a registered cow or not, my advice is, always buy a registered bull and the best you can find! Twenty-five or \$30 is no object here, as it is half the herd. And whatever herd you start in with, stay by it by all odds. Always breed toward a fixed point and never swerve. Be satisfied with the pedigree before you consider the price. I would never get a bull unless his dam had made at least fourteen pounds of butter a week.

About Feeding.—After we have our herd selected the next step is proper feed. That the "balanced ration" is the only economical way to feed is too well established and too plain to need any comment. Whatever method you may adopt don't work it on the feast and famine plan. It may make a very good showing at the end of the year as to the quantity of feed, but it will make very poor showing as quantity of butter. Better feed the cows well of a day or even a month at a dead loss in order to bridge over some period of shortage, than to let them go hungry. Our best dairymen very carefully avoid any such periods as being detrimental to best results. With the aid of a silo the chances for such a period will be reduced to a minimum.

"I cannot say too much in favor of the silo," is the unanimous answer of those who have tried them. The silo has long passed the experimental stage and is an established success. They are the greatest economizers in modern dairy practice, and are revolutionizing the feed problem whenever they are used. I believe with the aid of the silo the dairyman of southern California can keep a third more cows with better results on the same land.

About Milking.—After the cows are fed we are all painfully aware of the fact that they have to be milked. Mr. G. E. Platt, of Los Angeles, tells me that in his experience, a good man who thoroughly understands his business and takes an interest in it will milk his wages out of a string of cows over and above the average milker. There is certainly room for thorough investigation here for most farmers.

Cleanliness.—And now after the soil has been tilled, the crop gathered, the cows raised and fed

and milked, and we have the finished product, in all its natural perfection, will we deliberately spoil or impair its value for want of what ought to be a second nature to every decent dairyman—cleanliness. O! will you say it all goes in together and I just get as much for my milk as my neighbors do, whether I am careful or slovenly. Then "our butter and cheese seem to go on a ready market at good figures." But that proves nothing. We do not get as good prices as we would if we made a better article and the best butter or cheese maker in the country can't make a perfect article out of poor or dirty milk.

To Compete in Wider Markets.—Beside the dairy business is increasing at a wonderfully rapid rate, in this sun-kissed land of ours, and we must prepare to compete in the open markets of the world. Here is the grading of a car of our best creamery butter in New York. "On inspection it was found that the product of certain creameries that stood A 1 here showed up possessed of foreign flavors. Had they been possessed of clean, quick flavor they would have graded as extras. However the flavor was off and might be described as fishy. Other lots that showed up perfect in every respect but lacked quick, full flavor, merely passed as good, while still others were possessed of a foreign flavor known as 'cowy.'" Evidently the patrons of this creamery or some of them allowed the milk to stand around the barnyard, subject to its influences, so this butter could not hope to grade as extras. If we expect to make perfect butter or cheese we must be scrupulously clean about the dairy. But there is little hope of securing such cleanliness until the dairymen manifest a pride in their business. There is nothing like the dairy papers and farmers' institutes to stimulate this pride.

Dairy Book-Keeping.—But even after we have taken all the initiative steps towards a better and more progressive business, we will be left to grope in the dark, as it were, unless we take this last precaution. Without it the speediest and highest development is impossible; I refer to a system of specialized book-keeping; a special account with the different departments of the farm. It is like a little corn meal in a leaky water trough. For instance: You would have an account with the dairy department, charging the dairy with all feed consumed, all labor and other expenses incidental to that department, crediting it with its products, milk, calves, fertilizers, etc. You would have a hog account and a chicken account. Then at the end of the year if your accounts showed that you had fed \$300 to your hogs and had produced \$250 worth of hog meat, while you had fed \$75 to your chickens and had sold \$150 worth of produce, we would not be surprised to find you raising fewer hogs and more chickens.

This system of specialized accounts is not a new thing. It is the secret of the success of our great department stores and is in vogue with many of the best dairymen. Such a system may not be complex but may be arranged simple and convenient to suit the individual needs.

I have now outlined, briefly, the fundamental principles that have made possible such results as I have read to you. But could I, by some means, arouse the dairymen to a persistent and systematic study of their business, and to take advantage of the knowledge and experience of others as may be had through the medium of dairy papers and farmers' institutes, I would have done more toward increasing the profits of the dairy and making the farm pleasant and attractive, than had I read in your hearing every fact in the category of dairy knowledge.

THE SUGAR BEET.

Cultivation of the Soil for Sugar Beets.

By W. J. SCHAEFER at the University Farmers' Institute at Chino.

The manner of cultivation of the soil depends upon what kind of plants we are raising. I will, therefore, give my views chiefly on cultivation of sugar beets. Now, I think the soil is a good deal like a locked safe, and if we want to get treasures out we must have a key to open it. It seems to me we should all be thankful to Nature that she has set such a safe before us; that we can open and get out treasure after treasure. Now the question is, "What is the key to the safe?"

It is the Plow.—Plowing is the most important matter in raising the crop; as the nature of the sugar beet is to grow straight and long, we should with our work give it a chance to grow long and straight, which we can do my plowing deep; the deeper we plow the longer the beets will get; shallow plowing the beets will grow short and rooty. A well-shaped beet, that is to our profit, should be long and slim. By my experience I prefer sub-soiling to any other deep plowing, because it takes less horse power and does better work.

How to Plow.—Now I will give an illustration of the work I do in my field: My plow cuts a furrow 14 inches wide and averages about 10 inches deep,

which it turns over well; then we have a sub-soil plow fastened to the other plow, which goes about 4 inches deep; the size of the furrow is 14 inches wide and 14 inches deep. Now suppose we take another plow and plow the same sized furrow, without a sub-soiler; in the first place it will take more horse power to pull that plow and it cannot turn this furrow over as it should, and by that kind of plowing we should get too much raw soil on the surface at once, which is not fitted for plants to grow in, unless we plow in the fall, or three or four months before planting.

When to Plow.—I prefer that all plowing be done in the fall; by that we open the soil so that the sun, air and rain can go through it, which it could not do in late plowing. It is a good plan to plow a little deeper every year. The deep plowing is to our benefit for the reason that it holds more water. As we do not have any rain in the summer we must keep our land as moist as possible, and even in damp soil the deep plowing is best, because the water will go down deeper, giving the sun and air more chance to dry out and warm the soil, so that the roots of the plants can grow down deeper. The deeper we plow the more soil we have to our service. For instance, we will plow a field 10 inches deep and raise a good crop for five years. After that it will be nearly all worn out. But, if we take the same field and plow it 14 inches deep, it will last all of three years longer.

The Finance of Deep Plowing.—Now suppose I rent 40 acres of land and pay \$10 rent per acre, and plow my field 14 inches deep, and a neighbor rents a field of 60 acres (the same soil) and plows 10 inches deep, and he pays \$10 an acre rent, he has to pay \$20 more rent than I do, while I have just as much soil in use as he has. He has it more on the surface, and I have it more in the depth. The moral of this is: Not to undertake too much, but to do the work well on what we do undertake; by that we save expenses.

Points on Laying off.—It is not good to plow our field the same way every year; if we plow our field north and south this year, the next year it should be plowed east and west; but if this cannot be done and we have to plow the same way as before, then turn the furrow back. The reason for this is that in all our work of plowing, harrowing and cultivating we should thoroughly mix our soil, like a mason mixes his lime and sand; then it will unite and get stronger. It is not good to plow around a field, as it is a damage to the horses and soil. In all our work we should make it as easy for our horses as we can. In plowing around a field the horses are always in a hard pull; but if we can make a headland on each end, then the horses can turn around easier and their shoulders can cool off a little. We are spoiling the soil when we are turning the horses on the fresh plowed ground, for this reason: The horses will pack the soil too hard when it is in that condition, and it also makes the surface very uneven and unhandy to plant and cultivate the beets. All work should be done at the right time.

We should always try to plow straight furrows, not too wide a furrow, and in that way we plow all of our soil. If we don't raise a better crop on such plowing, we are more contended; and most anybody likes to see a neat job.

We should not leave any unplowed corners where weeds and grass grow, for where we don't plant we cannot harvest. We can plow a whole field and do a good and neat job without turning our horses and tools on our neighbor's land; by that we keep the friendship of our neighbors, which is worth a good deal in time of need.

Harrowing.—After plowing we should work up our soil with a cultivator or harrow as deep as it is plowed if possible; we should aim to pulverize the lumps in the bottom as well as on the top, then the soil will hold moisture longer and there is nothing in the way of the roots of the plants to grow through. This very important, but it is more important not to work our soil when it is too wet; by that we not only spoil the growth of our plants, but the soil itself. I have had the experience where I worked my land too wet, that I not only lost in tonnage, but the purity in the beets was very low in that spot. We should not only aim to get a good percentage of sugar, but also a good purity, which we can help by working our soil at the right time.

We can also get more sugar and higher purity by careful work in harvest time, of which I will speak later on. In my opinion every farmer should keep a record of the work done on each piece of land and the results from year to year.

I have had the experience that fall plowing should not be plowed again in the spring, but should be cultivated, because the spring plowing turns up cold soil to the surface and leaves a crust on the bottom of the furrow through which the root of the plant cannot go. If the land which has been plowed in the fall is cultivated in the spring, then the warm soil is left on the surface and seed sown in that soil will grow fast.

Planting.—Before planting the soil should be well packed, which can be done by rolling, or repeatedly harrowing it, which will cause the seed to germinate quicker and the roots of the plant can get a better hold to get nourishment. We should not plant beet

seed on ground that has been rolled with a smooth roller before planting. Being rolled it forms a kind of crust on the surface which shuts off the air and sun, thereby keeping the soil cold in which the seed will not germinate well. We should not plant the seed too deep or when the soil is too wet or cold. When it is too wet the soil will stick to pressing wheels of the seeder and form a crust over the seed which will not let the sun and air in, leaving the soil cold and wet, and if the seed germinates it will grow up to the crust and turn down again and spoil. When the seed is planted too deep it will take the sprout too long to come to the surface and it makes the sprout too weak and it grows too slow, giving the worms and alkali more opportunity to destroy it.

I think rolling the beets before thinning is very good, especially in heavy soil, as it packs the soil closer, giving the roots more nourishment and also removes the hiding places of the insects which destroy our beets.

Cultivating.—The cultivator is of great value to our crops; by its use we keep the soil clean of weeds and in moist condition. Now we will see in what way. The soil that is not worked in the summer time will soon dry out. Why? Because on the surface a hard crust is formed and in that crust are little air tubes and the wind blowing over the soil by day will suck all the moisture up through these little air tubes and the soil will soon be dry; by cultivating the soil we remove the hard crust, destroy the little air tubes and loosen the soil deeper; then during the night the dew and damp air will moisten the soil, giving the plants nourishment, which it could not do if hard crust was there.

Harvesting.—Now we will see how we can improve our soil during the harvest time. In harvesting our beets, it is better to use a plow than a puller. By using a plow we open the soil so that the wind, dew and rain can get in, and it will give the soil nourishment for the coming year.

During the harvest it should be very important to us that we harvest the whole crop, because every beet that we leave in the field takes nourishment from the soil and gives feed for the worms; some may think that this is not worth speaking about, but carelessness will ruin any business, and if one does not save the cents he will save no dollars.

We should plow out beets deep enough to get all of them, because the lower end of the beet is our profit, for in it is the sugar and purity.

But remember we have to work accordingly as the weather, the soil and circumstances will allow it. I consider that farming is more or less like an experiment station, and so I have given only the main points.

THE FIELD.

Feeding Value of Kafir Corn.

We have had much to say of the value of the sorghums as superior to Indian corn for hot, dry regions. Of the sorghums perhaps none is better for deep rooting and drouth resistance than Kafir corn. It is widely known and esteemed in California, but probably more facts about its feeding value will be acceptable.

The Oklahoma experiment station is trying a series of feeding experiments largely to determine value of Kafir corn. Some interesting results have been obtained. All the trials confirm the belief that Kafir corn in any form is a healthy and palatable food for any class of farm animals. The Kafir stalks and leaves have been eaten as readily as have corn stalks. Horses, cattle, sheep and hogs all eat Kafir grain, ground and unground, readily, and no indications of any unsatisfactory effects on health have been seen.

Kafir Corn Meal.—There is large waste when the grain is fed unground to horses or cattle; apparently much less when feed to sheep. In a series of digestion experiments with steers it has been found that about one-half the seed passes through the animal undigested. A large part of this is made use of if hogs follow the cattle. Contrary to general opinion, the per cent of undigested grain was practically the same when it was fed "in the head" or threshed. With two lots of steers as nearly alike as it was practicable to secure them, the lot fed Kafir meal made larger gains than those fed corn meal, even when the feed was changed from one lot to the other.

Half-and-Half.—The largest gain made by any lot for any period was made by one fed one-half Kafir meal, one-half corn meal. From some unknown reason, another lot so fed made no gains, so that the average gain in all the trials with this mixture is somewhat less than the average where Kafir meal was fed alone, but slightly larger than the average gain where corn meal was the only grain food. The best average gain by different lots was where they were fed Kafir meal with a moderate allowance of cotton seed—about four pounds per animal per day. One lot, the chief grain feed of which was Kafir heads, made an average gain of 1.85 per day. The companion lot, fed Kafir meal, made average gains

of 2.36 pounds. The steers ate slightly less weight of heads than the others did of the meal.

Indian Corn Better.—During the first four weeks of feeding—not counting preparatory period—a lot full fed broken ears of corn made average gain of 3.27 pounds per day. The companion lot, given same food but slightly less than they desired, made average gain of 1.66 pound. Each lot had all they would eat of "rough feed." Where cotton seed was the only grain feed, the average gain per day by young steers was only one pound. A lot of lambs have kept in good health with only Kafir heads as grain feed, but have not made great gain in weight. In no case have hogs done quite so well when fed on Kafir as when fed Indian corn. These trials have not been extended enough to justify drawing positive conclusions, except that it may be counted settled that Kafir corn is a very valuable grain crop for Oklahoma, and, probably, the most valuable one for a large part of the territory.

California Combined Harvesters.

At the Monday Night Club in Auburn, Placer county, recently Mrs. M. M. Stuart read an entertaining essay on the evolution of agricultural implements. Her closing paragraphs were as follows:

Probably the greatest achievement has been in the production of the combined harvesters, run by horse or steam power. The distinction of this industrial achievement belongs to California—this State of long distances, vast areas and great adaptability to agriculture. When the necessity for this machine arose, it was forthcoming; and though Australia and other grain countries doubted the utility of a cumbersome machine requiring from twenty-four to thirty-six horses to operate it, the idea had taken root here, and development went steadily on. To Mr. John Service of Ceres I am indebted for definite facts in regard to the harvesters run by horse power and to a recent article in the PACIFIC RURAL PRESS for information relating to the steam harvester. Young's combined harvester cuts a strip 16 to 30 feet wide, and requires from thirty to thirty-six animals. The machine in use by Mr. Service cuts a swath 20 feet wide and uses thirty-two horses. It will cut from thirty to fifty acres per day, employing four men—one as driver, one to tend the machinery, one to tend the lever, to raise or lower the sickle as the grain is tall or short, and one to fill and sew the sacks of grain and pile them on the dump. When they have collected three to five, or sometimes more, and are opposite the row of piles of sacks, the platform is tipped and the filled sacks slide off to the ground to be gathered up and put in the wagon and hauled to the warehouse. If the grain be very good, two men are required for this part of the work, for the grain will be threshed more rapidly than one man can handle it. In this machine the straw is blown out onto the ground, but the chaff is collected in the chaff carrier and then dumped in a pile at short intervals.

Another type of harvester is known as Best's new steam harvester, originated by Daniel Best of San Leandro, which has stood the test for years, and may be profitably used on either flat or rolling land. On reclaimed land on Roberts' island, near Stockton, four of these harvesters were in use last year. The machine could not be used well there with horses on account of the character of the soil, but the traction wheel with 54 inches of bearing surface moves it finely. In grain which was badly down, and going twenty-six sacks to the acre, it worked well, cutting a 25-foot swath and threshing and cleaning well. It is claimed that under favorable conditions the machine can harvest sixty to seventy acres per day and can be operated at a cost of \$20 per day, including the wages of seven men and the coal or crude oil which is used for fuel.

"Verily, the world does move!" and who shall say what the next generation may evolve?

Corn Growing in California.

Those who have moist land or land that they can make moist will do well to get a good crop of Indian corn this year wherever the local climate favors this crop. Much will be made of Egyptian corn and the other sorghums as the RURAL has recently explained, but still old-fashioned cornmeal and corn fodder will be fine if one can get it this year. The Rural Home, of Escondido, San Diego county, has a very timely article on the subject by a local grower, which should be widely read and heeded.

Corn in San Diego County.—In several of our most populous and wealthy States, "corn is king" among cereal crops. It has never attained that rank in California, as wheat has heretofore and probably always will be the leading grain crop. Corn, while not the leading crop here, as it is in Kansas and Nebraska, is by no means an insignificant factor in California's yearly crop reports. Our reputation as producers is based mainly on the various fruits which here attain perfection in size and flavor, and which will always hold first place in southern California. Yet it is an incontrovertible fact that good

corn land will sell more readily here than fruit lands, or rather such lands as are adapted to fruits, but which cannot be depended on for corn or alfalfa. The best corn and alfalfa lands are generally also well adapted to all varieties of deciduous fruits, and particularly so to apples, peaches, apricots, pears, and the small fruits as well.

Corn and Alfalfa.—As a preparation for alfalfa the cultivation of corn is of peculiar benefit, and the leading alfalfa growers are getting more and more in the habit of rotating corn with alfalfa. After the latter crop gets somewhat "ragged" and weedy as the result of gopher work, and the encroachment of the "devil's grass," otherwise called "fox tail," a good deep plowing and a season's growth and cultivation of corn not only neutralizes the gopher and fox-tail nuisance, but yields, generally, a handsome profit for the work expended.

Corn and Wheat or Hay.—I believe that if much of our uplands, devoted to hay and grain so constantly, were given an occasional change to corn, with deep and thorough culture, our farmers would soon realize an immense benefit. A corn crop prepares the land for the following year's seeding fully as well as a summerfallow, and the beauty of it is, the farmer gets feed enough to more than pay for plowing and cultivating; whereas with a summerfallow, the whole season is lost, although the result obtained by the "rest" to the soil and the plowing is usually sufficient to compensate for the loss of time. The crop succeeding a summerfallow is usually so much better than the average as to justify the system of giving periodical rest to the land.

Corn This Year.—All these benefits and more can be obtained by rotation. The present season is likely to prove exceptionally dry, as the rainy season is near its end. This will not be favorable for a corn crop, though we might reasonably expect to get enough feed to pay for the plowing and planting, especially on moist bottom land. It would be desirable to plant as early as possible, but, unfortunately, our dry seasons are emphatically cold, and the liability of late frosts makes it somewhat risky to plant early.

Along the coast, where good corn crops are the rule, the season for planting has been found by experience to be between March 20th and April 10th. The uplands can safely be planted two or three weeks earlier than the bottoms, but the latter almost invariably come out ahead in yield. The principal value of the corn crop on the uplands is in the rotation, and preparation for the next year's crop of grain or hay, and in the yield of fodder for stock. While not equal to hay, the fodder is not to be "sneezed at," especially in such a season as the present. When sown thickly in furrows, 4 feet apart, it yields a large amount of rich, succulent feed, and is equal to alfalfa for milk.

Varieties.—In regard to variety, it is quite generally conceded that the small yellow, or Mexican flint corn, is the surest to yield, especially on uplands or in a dry season. It suckers freely and will make a large amount of excellent fodder, while the grain usually sells for more than the large corn. I have noticed that popcorn makes a fine fodder plant, and though the grain yield is small it sells for much more than the large sorts. Sweet corn is a very desirable fodder plant, especially for milk cows. The large kinds, both white and yellow, succeed best on the sandy loam bottom lands, and upon such land it can be depended upon to yield a profitable crop, even in dry seasons. One quite common fault here is in planting too close. The rows should be not less than 4 feet, and in drills from 18 to 30 inches apart, or in hills of two or three stalks 4x4 feet.

FRUIT MARKETING.

Cured Fruit Marketing.

FIRST PAPER.

By F. M. RIGHTER of Campbell, Santa Clara County, at Sacramento Fruit Growers' Convention and San Jose Farmers' Club.

The marketing of cured fruits by the most approved method, and hence at the least possible cost, is the object sought. We will first call your attention to the difficulties that stand in the way of securing this object, and next to those methods that may be wisely employed in removing them. The principal difficulties, briefly stated, are: Ungraded fruits, unsuitable warehouses, inadequate means of holding the surplus fruit left in the hands of the producers after the trade has stocked up in the early part of the season, consignments of fruits to Eastern agents, thwarting the law of demand and supply by means of "short sales," "wash" or "washed sales," circulating false reports about the crop supply, want of reliable information relating to both the supply and demand, a too limited market, and, last and greatest difficulty, the present method of selling. We will take up the difficulties in the order mentioned and briefly consider each.

Grading.—Before cured fruit can be sold to the best advantage by any method it must be accurately graded. The grades should be as fully and definitely known, at least to the trade and the producers, as the grades of wheat, barley, butter, or any other

largely consumed product. As fruit is now prepared for the market all dark or otherwise imperfect fruit is "sorted out" as it is taken off the trays. What remains can, by means of the modern dried fruit grader, be separated into grades at a cost of from 15 to 50 cents per ton, depending on the facilities for grading. Hence this difficulty can thus be removed at a very small expense.

Warehousing.—It is not only requisite that producers should grade their fruit, but they should also provide suitable warehouses at shipping points, and grade, store, insure and issue warehouse receipts covering it. By co-operation they can build these warehouses at the least possible relative cost, besides placing themselves in position to furnish carload lots of the different grades. When these grades become definitely known to the parties interested, fruit can then be sold without sample or prior inspection of the buyers, thus effecting a great saving. Until this has been accomplished both the buying and the selling of this product will continue to cost far more than is necessary.

Handling the Surplus.—Probably the greatest losses that both the producers and the trade now suffer are due to the former not having provided ways and means for the surplus left in their hands after the trade has "stocked up" in the early part of the season. This surplus is possibly 40 per cent of the entire crop. It need not be said that it is unwise to ship it to markets already fully supplied, nor need it be said that there is not a shadow of wisdom in instructing the consignees to "promptly close out the consignments on arrival, at the best obtainable prices." Nevertheless, not a little of it is so handled. The trade being then supplied does not want it, and will not buy it at that time, unless forced to do so for self-protection. If they will not buy it, it must be sold either to their customers or to speculators. Had the latter class no desire to increase their capital, ordinary business prudence and sagacity would be sufficient to induce them to buy at a price so low as to fully protect them against any possible drop in prices. But it goes without saying that they are doing business not to protect but to increase their capital; consequently the prices they will pay will be so low as to fully insure them a tempting margin of profit over and above all carrying expenses.

Then, again, the carrying expenses are greater in large cities than in your own warehouses, owing to the higher rates of storage and insurance. This is a way of carrying the 40 per cent, but no one will claim that it is the wisest. Suppose that neither the wholesale dealers nor speculators will purchase this surplus at the time it is put on the market. In that event your brokers must seek the wholesale dealer's customers. To obtain these they must, as an inducement, quote prices lower than the wholesaler's, or else they cannot hope to secure them. When this point has been reached the wholesalers have left but the choice of losing either their money or their customers, and as business cannot be done without customers, it is evident they will decide to lose their money. How much both the trade and the producers will lose depends principally upon how hard these brokers are pressed to sell. Thus both parties suffer loss on all the unsold fruit.

Rising and Falling Markets.—When brokers are constantly urged to sell, notwithstanding the market is fully supplied, they are thereby forced to cause a falling market. As more goods can be sold on a constantly rising market than on the reverse, it is greatly to the interest of both parties that the market should be a rising one. On a falling market both the trade and the producers suffer losses, while on a rising market both make gains and also increase the consumption. That more goods are sold on a rising than on a falling market might, on first thought, be doubted by some, but a moment's consideration will convince such that it is a fact. For example, wholesale dealers will push the sale of those goods upon which they are making a profit. Instruction to their traveling men to push the sale of cured fruit would result in selling much more—possibly two or three times as much—than would be sold were no such instructions given. But no such instruction will be given when the market is falling, and they are making on that line but little, nothing or less, since they must of necessity neglect it, and devote their time and energies to those lines that pay, the natural result being smaller sales of dried fruit. Smaller sales further depress prices, while, on the other hand, the more goods sold the greater the demand, and, consequently, the higher the prices.

Buyers' Costs.—As our product is now being sold wholesale dealers, or their agents, find it necessary to travel all over the State, and over portions of it several times, in order to examine and purchase the fruit they want. This is a large and almost needless expense, which greater concentration and accurate grading would well nigh, if it did not wholly, eliminate. A like expense is paid on all consigned fruit, as the consignor must pay the consignee's and solicitor's expenses incurred in securing the consignment. This item is far more than it need cost him to sell his fruit if the best method is employed. No one should consign unless the consignee has guaran-

teed to net the consignor f. o. b. California prices. If he cannot do this he is worse than useless to the consignor. An examination of "account sales" of most consignments will show that the cost of sale was not much less than 6 or 7 per cent, while that service need not cost 1 per cent.

Consignments.—It is the want of money at the close of the year that principally causes consignments. Consignors seem to forget, or else do not know, that on a warehouse receipt the local banks will advance them as much or more money than any commission merchant or broker will, while the selling of the fruit remains under their control, whereas they lose all control of it when they consign it and accept an advance. If they also instruct their agents to "promptly close out their consignments on arrival," they thereby place their financial making or breaking wholly in the hands of those who are most interested in those who sell products, not those who produce them. If such a course does not result in breaking the producers, it will not be owing to insufficient instructions.

The law of supply and demand ought to and will govern prices under normal conditions. If, however, your agent sells your product simply to obtain money he has advanced on it, plus his charges, or ships it to fill his earlier "short sales," made at prices lower than have ruled since, or sells it at lower prices than any of your other agents (his competitors) will, his prices are not governed by the law of supply and demand, nor do they in any sense conform to it, but are simply such as his supposed selfish interest, and his urgent needs, aided by your capital and credulity, tempted him to make. So long as you force your products to compete with themselves by placing them for sale in the hands of these, some of whom act as though they believe that their interests are best served by each striving to prove to the trade that he sells your goods at lower prices than does any other one of your agents, you ought not to be surprised if this method of obeying the law of supply and demand results in netting you nothing more than your agent advances, plus his charges. This method of conforming to the law of supply and demand is also the best means of establishing and maintaining a falling market. Doubtless there are many brokers who do not want to do business in this way, but the lowest seller makes the market; hence, if some of them thus make low prices, the others must either sell at the prices thus made or not sell at all, while those prices prevail.

Short Sales and Wash Sales.—Concentration and an adequate method of selling our products would do much toward stopping, if it did not stop, the dishonest manipulation of the market by means of "short sales" and "wash" or "washed sales." Although "short sales" do not injuriously affect your interests in every instance, that they generally do will not be seriously questioned. Such is their design, at least. To illustrate: Those who buy of "short sellers" must believe that fruit will be higher at the time of delivery than at the time of purchase, and hence that they will make a profit by buying in advance of their needs. Prudence would not admit of their making an effort to advance prices prior to the receipt of their goods, lest the "short sellers" might prove to be unable either to deliver the goods or pay any resulting damage; hence all who have made these purchases, and all who have not yet bought, may be expected to "bear" the market for the time being. By the aid of these "bears," and that exerted both by "washed sales" and the circulation of reports which state the crop supply to be enormously larger than it proved to be, enough influence can usually be brought to bear to depress prices sufficiently to enable "short sellers" to fill their "short sales" at a profit. When the producers are fully assured that the demand will exceed the supply, prices will advance; but owing to their inadequate means of securing this information it is usually obtained after they have parted with their products. These and all other dishonest methods of manipulating prices may be expected to continue until a satisfactory method of buying and selling has been adopted.

No method can be mutually and entirely satisfactory unless it furnishes to both parties alike the fullest obtainable information relating to the real conditions that affect prices. When this has been done "short selling" will not be so tempting as now, since no small part of its success depends upon the producers not being well informed. The fuller the information of both parties the nearer will the law of supply and demand control prices. If both possess the fullest information touching all of the conditions that affect prices that law would righteously govern, and hence, conforming to its requirements, would be but yielding to the sway of justice and equity. But both have not reached that happy condition, nor can producers hope to make a reasonable approach without combining to secure the requisite information. "Wash" or "washed sales" are only "make-believe sales." They are conducted by one person who employs two brokers, one of whom is to sell and the other to buy certain products, the price being fixed by the operator. All of the transactions are entirely fictitious, though designed to convey the idea that they are real. They are without a tinge of honor or truthfulness, being

only a somewhat uncommon way of telling down-right, unequivocal falsehoods. Their effectiveness is principally due to their being circulated through the columns of purchaseable newspapers. Their object is wholesale deception, with the sole aim of affecting prices.

The method of selling our product that promises the greatest elimination of existing difficulties in the way of successful marketing will eventually be adopted, if the producers' good sense fails not. Such a method will be described in my next paper.

AGRICULTURAL REVIEW.

CALIFORNIA.

Butte.

THE HEMP CROP.—Register: The hemp crop in Butte seems a pretty safe crop as it is not planted until late when it would seem as if most danger from frost was over with. It is not so liable to injury as some other crops and it pays better than most other things that can be grown. A gentleman who is somewhat posted in hemp growing tells us that in this country it requires about one man for each ten acres of hemp produced so far as labor is concerned.

Los Angeles.

KANSAS HAY.—Pomona Beacon, April 30.—The first load of Kansas timothy hay arrived at Los Angeles last week. The Santa Fe Company has made a rate of 50 cents a hundred, which will enable southern California to feed its stock at a far cheaper rate this summer than it could have done otherwise. It is said that timothy can be bought of Kansas dealers at from \$4 to \$5 per ton.

Mendocino.

PASTURAGE SOUGHT.—Santa Rosa Democrat, May 3: A trainload of cattle from the south passed through Santa Rosa, on the way to Ukiah, Sunday. They will be pastured in Mendocino county. A train carrying several thousand sheep went through to Ukiah Monday.

HOPS.—Ukiah Dispatch: Work in the hop fields is progressing in good shape this year. All of the hops have been pruned and the ground is in good condition. Many growers have completed the second plowing and are preparing to set the poles, as the vines will soon be ready for training.

Monterey.

FEEDING STOCK ON SHARES.—Gonzales Tribune: William Casey, a stock raiser near San Ardo, came here with a band of 160 cattle looking for feed, and entered into negotiations with Phil Collins by which Casey agreed to give Mr. Collins one-third of his stock if the latter would look out for the remainder until danger of starvation is past. Mr. Collins drove the cattle to his place in the hills across the river, where feed is plentiful.

Orange.

OLIVE SHIPMENTS.—Seven carloads of olives have been shipped from Orange recently. It is estimated that the shipment which is now going forward will amount to ten or twelve carloads. This is the first season that olive picking has been undertaken on a large scale at this point.

Sacramento.

A TRAVELING IRRIGATION PUMP.—Antioch Ledger: The barge J. G. Merritt is going up the Sacramento and San Joaquin rivers on a novel expedition. Owing to the small rainfall, the farmers are very much in need of water, and the owners of the river steamers have agreed to help them. The use of the Merritt was given at actual cost, and she is to be towed wherever wanted by the river steamers. Two Krogh pumps, with a capacity of 20,000 gallons of water a minute each, are being put aboard, along with a 250 H. P. engine and boilers. The proposition is to moor the barge alongside the different farms and pump the water from the river over the levees into the ditches and canals that will be dug by the farmers.

San Diego.

FEED TO SPARE.—Escondido Times, April 28: Ten carloads of cattle arrived in Escondido Tuesday morning, and were unloaded at the stock yards. The cattle came from Lompoc, Santa Barbara county, where feed is very scarce, and were brought here to be driven to Mesa Grande. We learn that several thousand head of stock will be brought here from northern sections to be distributed on the mountain ranges in this county, in many places of which feed for stock is quite good. In this year of drought, San Diego county (in years past referred to as a "lot of sand hills") seems to be far better off than many northern counties.

San Bernardino.

THE RAIN.—Sun, May 1: Nearly half an inch of rain has fallen during the present storm, and it came in time to accomplish a world of good for southern California. Of course, it will not do the hay crop the good it would six weeks ago, but many a field from which little or nothing was expected will mature a fairly good crop, and it may be taken as a certainty that the price of barley hay will not stay at \$20 very long. But the great good will be in the orchards. They will be wet down thoroughly and left in condition to be cultivated, and

the effect will soon be noted everywhere. It is a thorough soaking which was needed, and which could have been had only at great expense to the irrigating supply. The storage supply in the mountains has also been greatly increased. It has been raining much of the time on the range, and the effect is seen in the mountain streams.

THE BEST FIELDS.—Riverside Press, April 30: There have been about 4000 acres of beets planted at Chino so far this season, and 500 or 1000 acres more may be planted on moist land. Fully half of the acreage planted will be a failure, owing to the dry, hot winds. No beets will be raised at Anaheim except on irrigated lands.

San Joaquin.

IRRIGATING FOR FEED.—Stockton Mail, May 2: There is plenty of water now in the Cowell ditch, in the southeastern portion of the county—more than enough. This is one of the main branches in this county of the Stockton & San Joaquin Irrigation Co.'s system, which also supplies the Oakdale ditch with water. Irrigation is going on, and a fine lot of feed will be raised.

IMPORTING CORN FROM NEBRASKA.—Capt. J. W. Smith received from Nebraska this morning 100 tons of yellow corn. It is shelled and is in bulk, which necessitates its being sacked here. As feed for horses and cattle is becoming very scarce and consequently high in price, it will soon be necessary to provide some substitute for hay, oats and barley. Corn now is worth about \$1.25 a sack.

San Mateo.

ON THE COAST SIDE.—Santa Cruz Sentinel, April 30: Pescadero farmers and stockmen have reason to be well pleased with the present outlook for crops. Early sown grain looks well, and even late sown will give a fair yield if no more dry, blighting winds prevail.

Santa Clara.

INSPECTING CATTLE.—San Jose Mercury, May 3: Special trains of starving cattle have been passing through San Jose almost daily during the past three weeks, the destination being principally northern California. After long delay the Federal inspectors have received instructions permitting them to pass on cattle for shipment out of the State, and from all that can be learned they will be kept busy inspecting cattle, which after being pronounced free from infectious diseases will be pushed through with all possible dispatch to Utah, Colorado, Kansas and Nebraska. A number of Eastern buyers have been on the ground for weeks, locating large lots and making preparations to move them as soon as quarantine restrictions would permit, and now that all details have been arranged there will no doubt be some lively work.

HAY MATTERS.—The number of inquiries for hay at a price which will warrant putting it before live stock seem to be on the increase. The Farmers' Club held a meeting Saturday to consider what was best to be done, and District Freight Agent C. J. Steeples' office was represented by C. H. Collier, who dispensed information as to rates from various points. A request was made for a reduction in the rate from Phoenix, Ariz., but up to this writing no conclusion has been reached by the officials of the Southern Pacific Company. Considerable hay is coming in from Oregon, Utah and Nebraska, but prices do not seem to be affected in the least, nor does there seem to be much prospect that they will, as parties who have hay to sell are not slow to take advantage of the situation and keep their prices up to the top notch.

APRICOT CROP.—The members of San Jose Grange are confident that the apricot crop will be much larger than was expected, and that there will be a fine crop of prunes. As the fruit crop generally throughout the State will probably be not more than one-half the usual crop, the conditions are excellent for satisfactory prices.

FOR A CANNERY.—Gilroy Gazette, April 29: The Committee on Home Manufactures of the Board of Trade has employed H. W. Van Schaick to gather data showing the yield of fruit for an average year in this locality and he is now receiving reports from the fruit growers. This information will be used in an effort to secure the establishment of a cannery and drying establishment.

Shasta.

ORCHARD IRRIGATION.—Anderson News, April 30: An 800,000 gallon reservoir has just been completed, to be used in irrigating the orchard owned by Mr. Damon of Honolulu, and in charge of Mr. Abbott of this place. Water will be taken from the Igo ditch through 1500 feet of 5-inch pipe, the laying of which has commenced. The work will be finished in a short time and water turned in.

Sonoma.

COYOTE KILLING.—Cloverdale Reveille, April 30: The present week has been an exceedingly prolific one for Tom Scott, and up to Friday seventeen scalps make the total of his week's work. The captures were made on the Frazier and Kissack ranches. A bounty of \$5 is given for each scalp and Mr. Scott, therefore, will receive \$85 as a remuneration for his week's sport, and the everlasting gratitude of the sheep raisers in that section.

HOPS.—Democrat, May 1: Some of the hop growers have been disturbed by the report that the war will injure trade, but their fears do not seem to be well grounded. The majority are preparing to put in larger crops than ever. The outlook is that there will be no oversupply. If England does not overproduce, the price will be higher than ever.

Tehama.

ACTIVITY IN PUMPS.—People's Cause, April 30: Darby Lay-

don's barge, with a 20-inch pump on board and power enough to run another, left Sacramento on Monday for Browning's ranch. On Tuesday the boat with a 20-inch pump for the Davis Bros. of Sycamore was to leave Sacramento. Every foundry in San Francisco that can make a pump has been running overtime for weeks. There is no doubt but that what the pump has come to stay, and that the land along either bank of the Sacramento river is better situated for the use of the pump than any other large body of land in the State. We will have no more drought along the Sacramento river.

Ventura.

SHEEP DEPARTING.—Santa Barbara Press, April 28: Thousands of sheep are leaving Santa Barbara and Ventura counties daily, the greater part of the shipments going east to Missouri river points. Commercial Agent Frye of the Southern Pacific reports that a special freight train of twenty-six cars left Saticoy Sunday for Chicago; thirty cars left Santa Barbara yesterday, and twenty-eight cars go from Ellwood on the 28th. There will also be several trains from Saticoy this week. The Southern Pacific and Rio Grande Western, over whose lines the stock are shipped, give the privilege of unloading the sheep at Ogden or other points in Utah, where they can feed for six months; and then, when in good condition, they will be shipped on to the Chicago market.

Yolo.

SOME WHEAT.—Woodland Mail, May 3: Webb Curtiss, in company with Oscar Parker, drove out over his 5000-acre wheat ranch Saturday afternoon and found some 3000 acres in fine condition; looking green and healthy and standing about 18 inches high. It is heading out nicely and unless we have some hot weather will produce a heavy crop.

SHEEP FOR THE TULE.—Record-Union, May 1: Large consignments of live stock from southern counties continue to pass through this city daily for the pastures in the north or Nevada. Twenty-five carloads of sheep went through yesterday en route to Knight's Landing, where they will be returned out to pasture.

Yuba.

BENEFITS OF COOL WEATHER.—Marysville Democrat, May 3: The predicted low temperature from April 28th to May 2nd has been realized, and with it came considerable precipitation of moisture on the Pacific coast. The rainfall in the southern part of the State was even greater than in this part of the great valley, while from the east and north the same reports come. This has been of great benefit to California, as it will add thousands of tons of cereals and hay.

CREAMERY SALE.—At a meeting of the Browns Valley Creamery directors to-day, Monday, May 16th, at 1 p. m., and the courthouse steps were decided upon as the hour and place for the sale of the creamery plant, the same to be offered in three parcels, then as a whole. One parcel will consist of the buildings and an acre of ground, the second parcel of the boiler and engine and the third parcel of the creamery machinery and appurtenances.

BUYING HAY.—Buyers from the cities are interviewing the farmers as to the prospect for a good hay crop. Hay will command a good price this season.

THE VETERINARIAN.

Veterinary Advice.

Needs Examination for Farcy.

TO THE EDITOR:—I often see enquiries in the Press about sick and lame horses. I have a mare which was well and in good condition up to a month ago. Now she has swellings on her legs and body. Some have broken and discharged; others disappear after a few days. She is very thin and her hair is loose, but she eats well. What can I do for her?
Chico, Cal. G. M. GRAY.

Have the nearest veterinary surgeon examine her to see whether she has farcy. Her symptoms are very suspicious of that dread disease.

E. J. CREELY.

For Soft Bunches on the Leg.

TO THE EDITOR:—I have a mare that I use for general work. Last September there came a soft bunch on her right hind leg about three inches below the hock joint, which grew to about the size of an egg, then broke and discharged pus for a couple of weeks. In a short time another one formed just above the ankle on the same leg. It was much larger than the first and discharged longer. Since then she has had no less than seven on the same leg and always on the outside or back part, and between the hock and ankle. She has one coming now on the back part of the leg which interferes with the tendons and causes lameness, but usually they do not make her lame; but the leg always swells very full during their formation. The mare is in good flesh and seems well otherwise.

San Juan, Cal.

W. T. DUNCAN.

Open the wound or bunches; insert a piece of cotton on which has been dusted a sufficiency of bin iodide of mercury. Feed exceedingly high, but give plenty of work. Give internally once daily two drachms of the iodide of potash.

DR. CREELY.

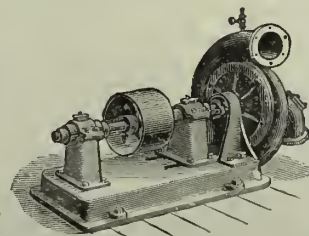
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THE HOME CIRCLE.

Wife, Children and Friends.

When the black-lettered list to the gods was presented,
The lists of what fate for each mortal intends,
At the long string of ills a kind goddess re-
lentled,
And slipped in three blessings—wife, children and friends.

In vain, surly Plato declared he was cheated,
And justice divine could not compass her ends,
The scheme of man's penance, he swore, was defeated,
The earth becomes heaven with wife, children and friends.

If the stock of our bliss is in stranger's hands,
The fund, ill secured, oft in bankruptcy ends;
But the heart issues bills which are never protested,
When drawn on the firm of wife, children and friends.

The soldier whose deeds live immortal in story,
Whom duty to far distant latitudes sends,
With transport would barter whole ages of glory,
For one happy hour with wife, children and friends.

Though valor still glows in life's waning embers,
The death-wounded tar, who his colors defends,
Drops a tear of regret as he, dying, remembers,
How blest was his home with wife, children and friends.

Though the spice-breathing gale over his caravan hovers,
Though around him Arabia's whole fragrance descends,
The merchant still thinks of the woodbine that covers
The bower where he sat with wife, children and friends.

The dayspring of youth, still unclouded with sorrow,
Alone on itself for enjoyment depends;
But drear is the twilight of age, if it borrow
No warmth from the smiles of wife, children and friends.

Let the breath of renown ever freshen and flourish
The laurel that over her fair favorite bends,
O'er one wave the willow, and long may it flourish,
Bedew'd with the tears of wife, children and friends. A. A.

For Jerry's Sake.

There are still localities along the New England coast where the old-fashioned stagecoach is the recognized means of transportation between the little seaside village and the nearest railway station. The office of driver of so important a vehicle often develops a peculiarly observant type of character. The man of the reins is, in the country parlance, "no chicken." He has driven to and fro too long and notable a succession of summer visitors, to be unfamiliar with metropolitan marks and manner. The city maiden, with her pretty wiles and graces, is no enigma to him; but for the young men of leisure, her partners in the season's game of hearts, he harbors less indulgence. He "sizes up" the wealthy stock-broker or bank president at a glance, but without awe of his ducats; and the sparkling rings on the fingers of the stately dowager make her wrinkled hand no fairer to his sight.

It is such as these, he would tell you, if he were to speak his mind, who "come with the birds." They are transient, like the life which they represent; his own mode of living partakes of the permanency of the scenes among which he dwells.

Yet the driver is not so independent a personage as to be unwilling to entertain and impress the passengers whom, in his secret heart, he estimates so patronizingly. To this end he dispenses with lavish lips his store of neighborhood tradition and romance. He is the most congenial of gossips, and his enjoyment of the good points of his own stories is not at diminished by the hundredth telling. Should one chance to be—as I myself was one golden day of June—his solitary fare, it might not be quite amiss to lend him a pair of listening ears.

The road, which had been for a mile or two among the favorite pine woods, led out suddenly into an open space commanding a distant glimpse of the sea. But it was not the sight of that

shining bit of blue which drew from me a sudden exclamation of surprise and pleasure. A noble slope of velvet turf at our right was crowned by a building of exquisite proportions, as utterly unlike the plain farmhouses which we had passed as if, like Aladdin's palace, it had been the magic of a night.

The driver regarded me with ill-concealed delight.

"Old Cap'n Jeremiah Parsons' place," he explained.

"How beautiful!" said I.

"Well, it is fine, and no mistake!" assented my companion. "Folks do pretend to say that there's few better; but, of course, that's not for us country folks to judge. There's the old Cap'n and his wife now, a-settin' together on the east porch."

He pointed with his whip toward a white-haired man apparently reading aloud from a book to the little woman who rocked gently beside him, busy with some light handiwork.

"A fine old couple—good as gold!" said the driver. "Some folks think that Miss Parsons is a little touched here"—he tapped his forehead suggestively—"but if that's so, all I've got to say is it's a pity more of us couldn't be hit the same way. Ah, well, it's a mighty queer story."

"Won't you tell it to me?" I asked.

"The Cap'n's what they call a self-made man. He hadn't anything to begin the world with, not even an education. He came of a sea-farin' race, and the only thing for such a boy to do was to ship before the mast. Plenty of others have done the same thing and stayed there; but Jeremiah Parsons wasn't that kind. He kept climbin' up gradual till he go to be master of a vessel. Then he saved and saved, till he bought a ship of his own. It was clear sailin' after that. I've heard my father tell a-many a time how everything he touched just seemed to turn to money. Why, he made a moderate-sized fortune on one voyage, when he bought up a cargo of Para rubber, and the price jumped fifty per cent before he got into port."

"Meantime he married his wife, a good girl that had waited for him to make his way, and that he'd been in love with ever since he was a youngster. He built a house on the same spot where this one stands, comfortable, but plain; for neither one of them cared for show, sometimes they'd shut it up for months at a time, while Mis' Parsons went on shipboard with her husband. They set great store by one another, and those as knew them best say that there was never so much as a cross look, let alone word, ever passed between them. The Cap'n was brave as a lion—didn't know what fear was—but with his wife he was tender as a woman."

"There was just one thing wanting. Though they were both masterly fond of children, they hadn't any of their own. My father used to say that he believed the Cap'n would 'a' given every cent he had in the world and done it willin', if so be he could 'a' heard a little voice callin' him 'Father!' I've heard him tell how they were drivin' one day, and they came to a mis'able cabin where there appeared to be a child's face to every window-pane, and the Cap'n drew the horse up short, and said he, sort a' fierce:

"How do you make that out, neighbor? There isn't a crust apiece for 'em here, and my house is empty."

"As for Mis' Parsons, the women folks said that the way she would stop a baby cart on the street and gaze on the mite of a face inside would 'a' most brought tears to a body's eyes."

"But strange to say, when they'd been married ten years, there was a boy born—as strong and likely lookin' as one would ever want to see. The Cap'n was near beside himself, he was that proud and happy; but they say that Mis' Parsons didn't seem hardly able to speak at all, but would just lay quiet with the child on her arm, never taking her eyes off it, except when she'd look up to smile in the Cap'n's face."

"There'd always been a Jeremiah in the Parsons family, so the boy's name

was waitin' for him; but because it seemed heavy-like for such a mite, Mis' Parsons shortened it up to 'Jerry.'"

"They'd got everything planned ahead for the boy up to the time when he'd be man grown. It did seem odd, plain as they'd always lived with all their money, that they should 'a' had such notions about the child. They couldn't 'a' laid out to do more for him if he'd been a prince of the blood. Granny Perkins was nursin' Mis' Parsons and she'd hear them talkin' low together, though she never let on she was listenin'."

"So you want another house, mother!" said the Cap'n.

"Why, yes, father!" "It was amazin'," Granny said, "how soon they'd learned to call one another 'father' and 'mother' and how natural the words seemed to come." "To be sure, we'd have been all right in the old one, but with Jerry growin' up everything'll be different. He's certain to be a great reader, so we shall want a room for books, and he'll be bringin' his mates home with him, so there ought to be a big parlor and plenty of chambers."

"We'll have everything of the best, mother. There's money rollin' up in the bank and we couldn't use it better than in getting things suitable for our boy. Thank God, we can give him a better chance than ever we had!"

"Granny said that somehow the least bit of a cloud went over Mis' Parsons' face at that; but, small as it was, the Cap'n sighted it, and says he gentle-like:

"What is it, dear?"

"She didn't answer at first; but when he kept on urg'in, she colored up and said she:

"You don't suppose he'd ever be ashamed of his father and mother, Jeremiah—he bein' what he will be and you and I without book-larnin'?"

"Ashamed?" said the Cap'n. "Don't you worry about that, Huldy! There was never a Parsons yet that was ashamed of his own flesh and blood; and our Jerry ain't goin' to be the first one!"

"But, Jeremiah—I thought—"

"Yes, Huldy?"

"We aren't so very old yet. If we could study some ourselves, maybe we'd be able to understand him better."

"The Cap'n slapped his knee."

"And a good idea it is, mother!" says he. "Only we'll have to begin right away to get a start of the little shaver!"

"And you'll give up seafarin', father, and stay home with Jerry and me?"

"There isn't a ship stout enough to carry me away from you. The boy'll be wantin' a pleasure-boat, maybe. We'll do our sailin' in that."

"Well, it went on that way till the day the baby was three weeks old."

Mis' Parsons had been puttin' it to sleep, and, just as she was handin' it to Granny to lay down, the old woman gave a scream.

"What makes him so white?"

"An awful look came into Mis' Parsons' face. She snatched the boy back, but he just doubled up limp in her hands. The long and short of it was the child was dead. The doctor called it heart disease, and that was all anybody ever knew."

"Well, poor Mis' Parsons lay at death's door for days, and, perhaps, 'twas just as well for the Cap'n that he had all he could do watchin' her, and couldn't fully sense what had happened."

"When, at last, she did begin to mend, it was so slow that she could hardly see the betterment from day to day. But one afternoon she woke up out of a long sleep, and one could see that there'd be a change."

"Father," says she, "I've had a lovely dream. I can't tell it to you; but I've had things showed to me. Father, you know the house we meant to build, and the books and the piano, and how we were goin' to study ourselves, and all that?"

"Don't, Huldy—don't, dear wife!" said the Cap'n, choking.

"But I must, father!" says she. "We weren't allowin' to do any of those things for our own selves, or for show, were we?"

"No, Huldy—no?"

"It was all for Jerry's sake, so that he could come up to a different sort of life than we'd had ourselves; and it wasn't to be just for him alone, because that might 'a' made him selfish and graspin', but for his friends—some of them, maybe, that hadn't much of their own—so they could be happy and safe there, and perhaps keep from wanderin'?"

"Yes, Huldy."

"Well, then"—Granny said she never saw mortal eyes shine as Mis' Parsons' did then—"is there any reason why we should give it all up just because Jerry isn't right here with us? He's our son, father. The Lord gave, but the Lord has taken away—David was mistaken about that. Jerry's just being saved for us till we can grow up to him. And because he's being looked after where he is there isn't any reason why we shouldn't be doin' for him down here. Don't you see what I mean, father?"

"You shall do just what you want to, dear wife," said the Cap'n, and then broke down, crying like a baby. Granny said she was thankful enough to see that, for she knew the dry grief that had been burning his heart out was broken at last.

"After that Mis' Parsons got well fast, and as soon as she was able the two went to Portland to see one of the

(Continued on page 303.)

ASTHMA'S PROGRESS.

From Cold to Cure.

No relief in other remedies.

There are many medicines that palliate asthma. There are few that do more than relieve for a time the oppressed breathing of the sufferer. There are few diseases more troublesome and more irritating than asthma. It interferes alike with business and with pleasure. It prevents enjoyment of the day and makes the night a terror. A remedy for asthma would be hailed by thousands as the greatest possible boon that could be offered them. There is a remedy for asthma. Dr. J. C. Ayer's Cherry Pectoral has cured hundreds of cases of this disease, and testimonials to its efficacy from those who have tried the remedy are multiplying with every year. The cases presented in the testimonials that follow, may be taken as exemplifying the quick and radical action of this great remedy.

"About a year ago, I caught a bad cold which resulted in asthma so severe that I was threatened with suffocation whenever I attempted to lie down on my bed. A friend recommending Ayer's Cherry Pectoral, I began to take it, and soon obtained relief, and finally, was completely cured. Since then, I have used this medicine in my family with great success for colds, coughs, and croup."—S. HUTCHER, Editor "Rolink" (Polish), Stevens Point, Wis.

"While on the Gasconade River, Ga., I

caught a severe cold which resulted in asthma. After taking doctors' prescriptions for a long time without benefit, I at length made use of Ayer's Cherry Pectoral, and was completely cured."—H. G. KITCHELL, Greenwood, Miss.

"Some time since I had a severe attack of asthma, accompanied with a bad cough and a general soreness of the joints and muscles. I consulted physicians, and tried various remedies, but without getting any relief. Finally I took Ayer's Cherry Pectoral, and in a very short time was entirely cured."—J. ROSELLS, Victoria, Tex.

Dr. J. C. Ayer's Cherry Pectoral is known the world over as one of the most effective medicines for the cure of coughs, colds, croup, whooping cough, asthma, bronchitis, and all affections of the throat and lungs. It is not, as are so many cough medicines, a mere "soothing syrup," a temporary relief and palliative, but it is a radical remedy, dealing directly with disease and promptly healing it. In response to a wide demand Dr. Ayer's Cherry Pectoral is now put up in half size bottles, sold at half price—50 cents. More about Dr. Ayer's Cherry Pectoral in Ayer's Curebook. A story of cures told by the cured. Sent free, on request, by the J. C. Ayer Co., Lowell, Mass.

Rock Me to Sleep.

Backward, turn backward, O Time, in your flight;
Make me a child again, just for to-night!
Mother, come back from the echoless shore,
Take me again to your heart as of yore;
Kiss from my forehead the furrows of care,
Smooth the few silver threads out of my hair;
Over my slumbers your loving watch keep—
Rock me to sleep, mother, rock me to sleep!

Tired of the hollow, the base, the untrue,
Mother, O mother, my heart calls for you!
Many a summer the grass has grown green,
Blossomed and faded, our faces between;
Yet with a strong yearning and passionate pain,
Long I to-night for your presence again.
Come from the silence so long and so deep,
Rock me to sleep, mother, rock me to sleep!

Over my heart in the days that are flown,
No love like mother love ever has shown;
No other worship abides and endures,
Faithful, unselfish and patient like yours.
None like a mother can charm away pain
From the sick soul and the world-weary brain.
Slumbers' soft calms o'er my heavy lids creep,
Rock me to sleep, mother, rock me to sleep!

Come, let your brown hair, just lighted with gold,
Fall on your shoulders again, as of old;
Let it drop over my forehead to-night,
Shading my faint eyes away from the light;
For with its sunny-edged shadows once more,
Haply will throng the sweet visions of yore,
Lovingly, softly, its bright billows sweep,
Rock me to sleep, mother, rock me to sleep!

—Elizabeth Akers Allen.

Fashion Notes.

Most of the new woollens are in fine, soft weaves.

The favorite plaid of the season will be those with the fewest colors in them.

The new Scotch ginghams and French zephyrs rival the taffeta silk in pattern and artistic coloring, and the summer girl who dons a gown made of these charming fabrics, with the dainty ribbon trimmings, and carries the parasol which comes to match the goods, will look quite as pretty at half the cost as the girl who walks in silk attire.

Black taffeta silk gowns are well represented in the early importations of French models, and they are made very dressy with a rows of lace insertions showing the colored lining through its meshes.

Beige-colored lawn gowns trimmed with bias band of the same, stitched on and made with a guimpe of finely tucked white batiste, will be very much worn for morning dress when the warm days come.

Plaid and plain shot silks are combined in new silk petticoats.

Edgings and flouncings made in all styles of lace are shown. Among the most popular are Brussels, Chantilly, Valenciennes, Venetian, Genoa, Flanders, point, duchesse and point de Paris.

The pretty and picturesque neck and shoulder effects, and the new way of adjusting the fronts, render the very fashionable princess dress one of the most attractive models of the season.

For spring and country wear in the summer improved patterns and qualities of the lightweight woolen fabrics have been brought out, similar to those which the best business houses import year after year, and which are bought as regularly by conservative women, and by fashionably dressed women also, who consider a tailor-made costume of such a material an essential part of their annual outfit. The choice among these suitings this year is unusually varied and handsome, both in monochromes and pretty fancy mixtures. A well-made, well-hung, silk-lined skirt of these fine wool fabrics, and an open jacket neatly fitted and finished, with which various pretty vests, both light and dark, are en suite, will always give the wearer a sense of being well dressed, and can be appropriately worn on more occasions than one would suppose.

Sashes of white satin ribbon are worn with pale gray and light lawn gowns. The ends are cut round and trimmed with some sort of lace, point, possibly, if you can afford it.

Moire grenadine made over moire silk forms very effective gowns when trimmed with bias bands of black satin. White chiffon over white or colored

Liberty moire is an exquisite combination for a dressy costume.

Embroidered nets, tulles and laces will have a most conspicuous place for summer and evening wear. Embroidery or lace work on the skirts will be confined to the lower half of the skirt. The embroidery for the waist is grouped principally on the bust.

A Census of the World.

The greatest undertaking of its kind in the history of the world was recently set on foot at the meeting of the International Statistical Institute in Berne. It is proposed to take a census of all the inhabitants of the earth, and to publish the results at the opening of the twentieth century on January 1st, 1901. The enormous difficulty of the work becomes apparent when one considers that at least two-thirds, and, perhaps, three-quarters, of the inhabitants of our planet dwell in lands none of which have yet been fully civilized, and many of which still remain in a condition of savagery. Yet the purpose is, as far as possible, to include in the enumeration every human being on whom the sun rises on a particular day in the year 1900. Explorers and census-takers are to be sent to every attainable point on the globe for the purpose. Such is the scheme. It looks impracticable. An attempt has recently been made to take a complete census of Russia, and this will aid the new undertaking immensely. During his tour in Europe Li Hung Chang became interested in the proposed census of the world, and, it is asserted, promised his co-operation and assistance in the work.

China forms the greatest factor of uncertainty in estimating the population of the globe. Estimates of the number of inhabitants in China vary sometimes by one or two hundred millions, and even the population of the chief cities can only be guessed at. So, too, Africa presents an enormous field of mysteries and difficulties. Estimates of its total population are constantly varying, because explorers frequently come upon knots and centers of population the real extent of which is unknown. The most careful statisticians admit that their estimates of the population of Africa may be as much as 50,000,000 out of it. West of India are the vast lands that Alexander overran in his conquest—Afghanistan, Persia and Turkey in Asia. How many scores of millions or even hundreds of millions may they not contain? Many of the uplands of Persia are practically unknown to the civilized world, but they can support a great population. No one knows how many people Africa contains. Even the islands of the sea and the Polar regions have many human inhabitants.

Nobody knows how many Esquimaux there are dwelling in the lands of eternal ice that encircle the North Pole; many of the islands of the vast Pacific swarm with inhabitants living on the open bounty of Nature, whose free and careless life has captivated the imagination of highly cultivated men like Robert Louis Stevenson, and when the census is completed, if it proves practicable, what will it probably show the total population of the globe to be? For many years past the common estimate of the number of the world's inhabitants has been 1,500,000,000—i. e., about thirty inhabitants to every square mile of land on the globe. If all of these inhabitants could be arranged in a row, standing shoulder touching shoulder, there are enough of them to completely encircle the earth at the equator, where it is about 25,000 miles around, no less than 22½ times! Twenty-two complete circles of human beings, shoulder to shoulder, and three-quarters of another such circle, standing around the globe where its girth is greatest—that is the spectacle that would be presented.

"Have you ever traveled in the South?" asked the New Orleans man of the chap from Bangor, Me. "Oh, yes, indeed!" said the Maine man. "I have been to Boston and New York." —Harper's Bazar.

Curious Facts.

New York contains more Hebrews than there are in Jerusalem.

If kept continuously running, a watch will tick 160,144,000 times in a year.

The capital letter "Q" will be found but twice in the Old Testament, and three times in the New.

If all the sparrows in Britain were exterminated to-morrow except one pair, in about thirty years the country would possess as many sparrows as ever.

Two persons playing dominoes ten hours a day, and making four moves a minute, could continue 118,000,000 years without exhausting all the combinations of the game, the total of which is 248,528,211,840.

A novel flower has been found at the isthmus of Tehuantepec. It has a faculty of changing colors during the day. In the morning it is white, when the sun is at its zenith it is red and at night it is blue. Only at noon does it give out any perfume.

There are in the world only twelve cities with over a million inhabitants, four of which are in China. London leads the list with 4,415,958. New York and Brooklyn combined rank third, with 2,352,150 (census 1890). Greater New York contains over three million souls.

Rome built roads and bridges to last. The new bridge across the Danube between Turn Severin, in Roumania, and Kladova, in Servia, will be built on the pillars of the old bridge at the same place erected by Emperor Trajan, the Romanian engineers having found that the old Roman work will stand the strain after 1800 years. A statue of Trajan will be put up in the middle of the bridge.

Popular Science.

No parental care ever falls to the lot of a single member of the insect tribe. In general, the eggs of an insect are destined to be hatched long after the parents are dead, so that most insects are born orphans.

The consensus of opinion regarding the origin of the migration of birds is that it began during the glacial period. The earth being then covered at either end with a cap of ice, all life was confined to a belt in the center; but the ice receded a little at certain seasons, leaving an uninhabited space that afforded the quiet and seclusion that all the higher animals seek during the breeding period. The birds went there, accordingly, to rear their young, and, as the ice receded farther and farther, they migrated farther and farther.

The coldest inhabited county appears to be the province of Werchotjansk, in Oriental Siberia, says the *National Druggist*. A Russian savant passed one entire year in this inhospitable region, and kept a daily record of the temperature, which he has recently published, and from which it appears that the daily mean of the entire year is 19.3° C., or 2.74° F., below zero. The daily mean for January, 1896, was 53° C., or 63.4° F., below zero.

Gems.

Life means learning to abhor the false and love the true.

If you want immortality, make it. If you want your soul saved, make it worth saving.—Joaquin Miller.

How sure one grows of the power of spirit over mind and matter. Matter has its laws, but the laws of mind are stronger, can overcome those of mat-

ter, but over all is Spirit with its laws, breathing through mind and matter, and molding them in its own likeness.

When the heart has found its true gravitation, it leaves that rest slowly, and returns to it slowly.—Dora Greenwell.

Eternity, which cannot be far off, is my one strong city. I look into it fixedly now and then. All terrors about it seem to me superfluous. The universe is full of love and of inexorable sternness and veracity, and it remains forever true that God reigns. Patience, silence, hope.—Carlyle.

DOMESTIC ECONOMY.

Hints to Housekeepers.

Fried sweet apples are good for liver or kidney trouble.

Pour vinegar over fresh fish to make the scales come off easily.

Beat the whites of eggs at an open window if the kitchen be hot and steamy.

Beating stewed apples till fine and smooth with Dover beater, instead of rubbing through strainer. This will apply to any soft fruit.

Bedroom floors may be kept cool and fresh by wiping them daily with fresh water. Microbes, moths or other insects are thus destroyed. Salt and camphor in cold water is an excellent disinfectant in bedrooms.

In rooms that lack sunlight it is astonishing to see how a strong, bright yellow color of just the right shade, introduced by means of a cushion, or chair, or hangings, will give brightness and life that are almost sunny in effect.

Parsnip fritters may be made by scraping and boiling three or more parsnips until very tender; then, having mashed and seasoned them with salt, pepper and butter, make a pint of batter, add the parsnips, and fry a tablespoonful at a time in boiling lard.

When the glass globes of the chandelier have become smoked and grimy soak them in hot water, to which a little sal soda has been added. Then put some ammonia in hot water and scrub the inside of the globes briskly with a stiff brush, whereupon rinse thoroughly and wipe.

SOFT GINGERBREAD.—One-half cupful of butter, one cupful of molasses, one cupful of sugar, one cupful of sour or buttermilk, one teaspoonful of soda, dissolved in boiling water, one teaspoonful of cinnamon, two eggs, about five cupfuls of sifted flour, or enough for a moderately thick batter. Cream the butter, sugar, molasses and spice; set the mixture on the range until lukewarm. Add the milk, then the beaten eggs, the soda, and last the flour. Beat hard for five minutes. Bake in small tins or a single cake, as preferred. It is excellent either hot or cold.

CHEESE CUSTARDS.—Cheese custards served with thin bread and butter sandwiches are often given as a separate course before dessert. Into a cupful of warm (not hot) milk stir one teaspoonful of cornstarch until dissolved, two tablespoonfuls of grated cheese, half a saltspoonful of white pepper, a few grains of cayenne, a quarter of a teaspoonful of mustard, and salt to taste. Heat carefully in a double boiler until the cheese is dissolved. Add four eggs, yolks and whites beaten separately until light and brown. The mixture should be baked separately, for each person, in paper cases or pattypans, and eaten as soon as done. All cheese dishes should be served very hot.

More Than He Expected.

Granite State Evaporator Co. Alda, Neb., June 19, 1897.
Gentlemen:—I am well pleased with the Cooker I purchased of you last fall, and find it to be more than I expected for the money. It takes less fuel than any other I have ever seen. I think if more farmers in this part of the country cooked their hog feed, we would have less of what is called Hog Cholera when we commence to feed green corn in the fall.
S. W. SPENCER.
25 gallon, \$12; 50 gallon, \$17; 100 gallon, \$24.
GRANITE STATE EVAPORATOR CO., 6 Temple Court, N. Y. City.



S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, May 4, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | May. | July. |
|----------------|---------------------|--------------------|
| Wednesday..... | \$1 23 @ 1 20 | \$ 91 3/4 @ 94 3/4 |
| Thursday..... | 1 23 1/4 @ 1 21 1/4 | 97 3/4 @ 95 1/4 |
| Friday..... | 1 17 1/4 @ 1 20 1/4 | 92 3/4 @ 94 |
| Saturday..... | 1 20 @ — | 93 3/4 @ 95 1/4 |
| Monday..... | 1 20 @ — | 95 1/4 @ 93 3/4 |
| Tuesday..... | 1 17 @ 1 21 | 92 1/4 @ 94 3/4 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | May. | July. |
|----------------|----------|------------|
| Wednesday..... | 9s 3/4d | 8s 11 1/2d |
| Thursday..... | 10s 0/4d | 9s 5/4d |
| Friday..... | 9s 8/4d | 9s 1/4d |
| Saturday..... | 9s 9/4d | 9s 1/4d |
| Monday..... | 9s 10/4d | 9s 3/4d |
| Tuesday..... | 10s 0/4d | 9s 5 1/2d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|---------------|-----------------------|
| Thursday..... | \$1 85 @ 1 84 | \$1 84 1/2 @ 1 79 1/4 |
| Friday..... | 1 76 @ — | 1 75 1/4 @ 1 73 1/4 |
| Saturday..... | 1 75 @ — | 1 72 1/4 @ 1 74 1/4 |
| Monday..... | 1 70 @ — | 1 71 1/2 @ 1 65 1/4 |
| Tuesday..... | 1 66 @ — | 1 61 1/2 @ 1 65 1/4 |
| Wednesday..... | 1 70 @ 1 73 | 1 66 1/4 @ 1 69 1/4 |

Wheat.

The declines in the local wheat market since last review have been about as sudden and heavy as were the advances of preceding week, and no substantial reason could be assigned for either, unless on the claim that the upward movement of previous week was wholly unwarranted, and that the decline was simply allowing values to get back to normal levels. There have been certainly no developments in other centers the current week to justify the breaks which have occurred here, mainly on Call Board, the present local market being largely a speculative one. There was a drop in May and December wheat of about 16c per cental, but 4@5c of this drop was recovered at the close. Quotable values in the spot market suffered a cut of about 10c per cental on milling wheat, and 12 1/2@15c on shipping grades, but there was a recovery of fully 5c on both sorts Wednesday, the market closing strong. In Chicago May wheat dropped about 6c per bushel, but fully 3 1/2c of this loss was recovered Tuesday, with the market excited and strong Wednesday, May wheat advancing to \$1 30 per bushel, and July selling up to 98 1/2c. Liverpool has been higher the entire week than previous week, and at close was very strong, with futures the equivalent of 18@20c per cental higher than last week's figures. France was reported to have removed the import duty from wheat until July 1st.

The clearances of wheat vessels from this port for the month of April remained at same figure as noted in last issue, nine cargoes being the aggregate for the month. As May starts in with only three ships on the engaged list for wheat loading, the current month promises to make the lightest record for the season in the way of grain exports, and indications at this date are that June will not show any improvement. In fact, the outward movement of wheat from this port during the next twelve months will likely be lighter than for any previous season since the wheat export trade of California has been a noteworthy feature. The output from Oregon and Washington, however, is likely to prove of liberal volume. Advances from these last two States are to the effect that not much grain is now remaining on hand, but there is sufficient quantity to enable sailing craft in the Northern waters, which has abandoned the Klondike business for want of patronage, to secure wheat cargoes for this port. The wheat coming to this center from Northern points is likely to meet with a good market, but how the tramp vessels bringing the wheat here are going to get away from this port profitably is not easy to answer. There is little demand at present for deep-sea vessels for any purpose, the freight market being flat. Freight rates on wheat ships from this port to Europe are not now quotable over 17s 6d per ton, and there is no local demand for grain ships at this figure. From Portland and Tacoma there have been recent charters at 25s 6d for iron ships to Cork, for orders to United Kingdom, Havre, Antwerp or Dunkirk.

California Milling.....\$1 75 @ 1 85
Cal. No. 1 shipping, alongside.....1 70 @ 1 72 1/4
Oregon Valley.....1 70 @ 1 75
Walla Walla Blue Stem.....1 75 @ 1 80
Walla Walla Club.....1 65 @ 1 70

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 white wheat per cental for the week were as follows for the options named:
May, 1898, delivery, \$1.85@1.66.

December, 1898, delivery, \$1.84 1/2@1.61 1/2.
Wednesday, at regular noon session of Call Board, May wheat sold at \$1.70@1.73;
December, 1898, \$1.66 1/2@1.69 1/2.
Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|---------------------|-----------------------|
| Liv. quotations..... | 6s 3 1/4 @ 6s 4 1/4 | 10s 1 1/4 @ 10s 3d |
| Freight rates..... | 17 1/4 @ — | 17 1/4 @ 18 1/2s |
| Local market..... | \$1.30@1.35 | \$1.72 1/4 @ 1.77 1/4 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on May 1st and April 1st:

| Tons— | May 1st. | April 1st. |
|-------------|----------|------------|
| Wheat..... | 45,557 | 57,413 |
| Barley..... | 115,134 | 17,350 |
| Oats..... | 3,400 | 2,745 |
| Corn..... | 852 | 721 |

* Including 23,032 tons at Port Costa, and 19,520 tons at Stockton.
† Including 6,455 tons at Port Costa, 3,147 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 11,836 tons for month of April. A year ago there were 31,074 tons wheat in Call Board warehouses.

Flour.

Market is quotably unchanged, but is easier in tone, in sympathy with wheat. No pronounced fluctuations in flour values, either up or down, are anticipated in the near future, or until new wheat becomes available for milling. Present supplies are composed largely of Oregon and Washington product, and much of the flour used in this State during the next cereal year will be of the same sort.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | \$3 75 @ 3 90 |
| Superfine, good to choice..... | 4 00 @ 4 25 |
| Country grades, extras..... | 5 25 @ 5 50 |
| Choice and extra choice..... | 5 50 @ 5 65 |
| Fancy brands, jobbing..... | 5 65 @ 5 85 |
| Oregon, Bakers' extra..... | 5 25 @ 5 50 |
| Walla Walla, Bakers' extra..... | 5 25 @ 5 50 |

Barley.

Market has ruled less favorable to the selling interest than during preceding week. The easier feeling was due more to decreased inquiry than to excessive spot supplies or heavy offerings of this cereal. Since the recent sharp advances in values for barley, millers and dealers have been running more and more on corn and oats, leaving actual requirements for Feed Barley decidedly small. The inquiry for Brewing Barley was still lighter than for Feed. Brewers and malsters have kept in the background, as though they were amply supplied for some months to come. It is generally believed that they are not carrying large stocks. They may intend, however, to draw supplies during the balance of the season from points east of the mountains. Whether this can be done profitably is extremely doubtful. Whatever course the brewers pursue, it is certain they will not stock up heavily so long as values remain anywhere near present levels. The speculative market was fairly active, options selling at a materially lower range than preceding week.

| | |
|---------------------------------|-----------------|
| Feed, No. 1 to choice..... | 1 32 1/4 @ 1 35 |
| Feed, fair to good..... | 1 30 @ 1 32 1/4 |
| Brewing, No. 1 to choice..... | 1 40 @ 1 45 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

| |
|--|
| May, 1898, delivery, \$1.34@1.35 1/2. |
| December, 1898, delivery, \$1.35@1.29. |
| Wednesday at regular noon session of the Call Board May, 1898, feed sold at \$— @ —; |
| Dec., 1898, \$1.30 1/2@1.31 1/2. |

Oats.

While arrivals from the North show some decrease, as compared with several weeks preceding, there has been steadily more than enough offering to accommodate all buyers. The market inclined against the selling interest without any radical changes being effected in quotations. The ordinary white variety constitutes the bulk of present supplies. Grays and Surprises are in limited stock, but there is little inquiry for the latter sort. They are growing out of favor, having little virtue beyond their cleanliness and beauty. The main objection to them is their tough hull.

| | |
|-------------------------------|---------------------|
| White Oats, fancy feed..... | 1 40 @ 1 42 1/4 |
| White, good to choice..... | 1 35 @ 1 37 1/4 |
| White, poor to fair..... | 1 30 @ 1 32 1/4 |
| Gray, common to choice..... | 1 32 1/4 @ 1 40 |
| Milling..... | 1 37 1/4 @ 1 42 1/4 |
| Surprise, good to choice..... | 1 40 @ 1 45 |
| Black Russian..... | — @ — |
| Red..... | — @ — |

Corn.

Tendency has been to easier figures, but no pronounced changes have been effected in quotable values. Market is liberally stocked with Eastern, and supplies of home product show considerable increase. The Eastern corn is being landed in carload lots at various points throughout the State, being about the cheapest feed now obtainable.

| | |
|----------------------------------|-------------|
| Large White, good to choice..... | 1 15 @ 1 20 |
|----------------------------------|-------------|

| | |
|------------------------------|-------------|
| Large Yellow..... | 1 10 @ 1 15 |
| Small Yellow..... | 1 25 @ 1 30 |
| Eastern Yellow..... | 1 05 @ 1 10 |
| Egyptian White..... | — @ — |
| Popcorn, shelled, No. 1..... | — @ — |

Rye.

Values remain in about same position as last quoted. While offerings are of very moderate proportions, not much is required to satisfy the demand at rates now current.

| | |
|--------------------------|-------------|
| Good to choice, new..... | 1 40 @ 1 45 |
|--------------------------|-------------|

Buckwheat.

Same inactivity as before noted continues to prevail in the market for this cereal. Values are in consequence necessarily poorly defined.

| | |
|---------------------|-------------|
| Good to choice..... | 1 80 @ 1 85 |
| Silverskin..... | — @ — |

Beans.

A further hardening in values has been experienced since last review, with market very strong in tone. Recent business has been principally in white descriptions and in Limas, although Pinks have come in for a fair share of attention. Most of the beans here are in speculative hands and are held for higher figures than are now current. It is generally conceded that the coming crop must prove very light.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 85 @ 2 10 |
| Small White, good to choice..... | 1 90 @ 2 15 |
| Lady Washington..... | 1 90 @ 2 10 |
| Butter, small..... | 1 50 @ 1 60 |
| Butter, large..... | 1 60 @ 1 75 |
| Pinks..... | 2 65 @ 2 75 |
| Bayos, good to choice..... | 2 90 @ 3 10 |
| Reds..... | 2 40 @ 2 50 |
| Red Kidneys..... | 2 50 @ 2 75 |
| Limas, good to choice..... | 3 00 @ 3 25 |
| Black-eye Beans..... | 3 30 @ 3 40 |
| Horse Beans..... | 1 25 @ 1 35 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

The bean market on the Atlantic side is outlined as follows, under recent date, by a New York contemporary, advices coming through by mail. Prices quoted are per 60-lb. bushel:

A pretty fair quantity of stock has been moved in one way or another, and with further considerable shrinkage in receipts the general market has shown up in better form, closing quite firm on most kinds. The trouble with Spain has interfered seriously with the export trade, but shippers have had some orders, and chances have been taken, some of the lots going to the West Indies in steamers of other nations. Marrow have ruled quieter than most other varieties, and during the first half of the week part of the sales were at \$1.37 1/4; for the past day or two \$1.40 has been obtained quite generally for strictly choice stock. Peas have advanced steadily and are now firm at \$1.17 1/2@1.20, with very moderate offerings. Medium worked up to \$1.30, at which a number of sales were reported. There is now a disposition to hold some of the best goods higher. Quite a good many Red Kidney have been moved this week and prices have advanced rapidly in consequence; last sales at \$1.85@1.90, and there is a pretty strong holding at the close. Several lots of White Kidney have been taken by shippers and the price has advanced to \$1.55@1.60. Not much interest in Turtle Soup as yet. Yellow Eye have sold a little better and sellers are inclined to hold stock slightly firmer at the close. Two San Francisco ships have arrived this week with 7483 bags of beans, about 3000 of which were Lima. Prices for these are higher—sales at \$1.75—and negotiations are pending on one or two long lines at more money. Lady Washington have had sales at \$1.20, but holders now generally ask 24@26 more for best quality. Reports from the Pacific coast are very strong. A large quantity of green peas has been sold of late, partly for export to Europe, and the market has improved a little toward the close.

Dried Peas.

There is little doing, more owing to absence of offerings than to lack of demand. Niles or Black-eye Peas are salable to relatively better advantage just now than Blue or Green-dried.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 90 @ 2 00 |
| Niles Peas..... | 1 65 @ 1 75 |

Wool.

Absence of activity continues to be the feature of the market, and it is impossible to name quotations for new spring wools, as there is absolutely nothing at the moment upon which to base values. Some Eastern manufacturers have been lately crowded to meet their notes at the banks, and have been compelled to unload wools at prices about ten per cent below first cost. It is this fact, in connection with the uncertainty of the future of the woolen goods market, that keeps buyers in the background and leaver holders at a loss to know what to ask. There is some little prospect, however, of a change for the better taking place at no very distant date.

SPRING.

| | |
|-----------------------------------|---------|
| Oregon Eastern, choice..... | 12 @ 14 |
| Oregon Eastern, fair to good..... | 10 @ 11 |

FALL.

| | |
|------------------------|---------|
| Northern, free..... | 11 @ 13 |
| Southern Mountain..... | 9 @ 12 |

Hops.

Market is dull and is devoid of encouraging feature for the selling or holding interest. There is no evidence of any inquiry on either local or foreign account. The only chance for revival of demand or development of firmness hinges on prospects for coming crop. Without serious injury to the vines from blight,

vermin or other cause, the market will be apt to continue to drag through the balance of the season at low figures. That the crop in this State will be materially curtailed on account of the dry season is not probable.

Good to choice, 1897 crop..... 11 @ 14

Late advices by mail from New York furnish the following concerning the hop market:

General condition is still unfavorable, and the inactivity of trade is causing a gradual weakening of holders' views. In some quarters there appears to be a willingness to make quite decided concessions in price if it would lead to business, and this keeps the market in a very uncertain position. A few purchases of State hops in the country by one of our leading exporters rather confirms recent advices of a steadier feeling in London, but the business in that direction does not assume sufficient magnitude to give much support here. Possibly shippers would make larger purchases if they could get just the class of stock wanted; but as a rule, they are not pleased with the quality of most of the remaining lots. Brewers have been considerably exercised over the talk of increasing the internal revenue on beer by \$1 per bbl., and it has been difficult to get them interested in any of the samples shown. From the returns to the government their March business shows a fairly good increase over the corresponding month last year, but they have considerable lots of old hops on hand and are disposed to use these before buying more. Quotations are still somewhat nominal, especially on choice hops, very few of which are left. The poor Oregonians are a perfect drug and can be bought down to 7@8c.

Hay and Straw.

Tendency of the hay market has been to lower figures, especially for choice to select qualities, values for which have been lately abnormally high. New hay is now being cured and will soon be on market in wholesale quantity. Some new Alfalfa arrived this week from Sacramento section, first sales being made at \$15.25. Timothy hay is on the market from the East and from Oregon and is offering at \$17@20 per ton, with probabilities of there being free arrivals of the same during the summer and fall. Straw is in light stock and is bringing comparatively stiff prices.

| | |
|----------------------|---------------|
| Wheat..... | 30 00 @ 25 00 |
| Wheat and Oat..... | 30 00 @ 24 00 |
| Oat..... | 18 00 @ 21 00 |
| Barley..... | 18 00 @ 21 00 |
| Timothy..... | 17 00 @ 20 00 |
| Alfalfa..... | 14 00 @ 15 50 |
| Compressed..... | 21 00 @ 25 00 |
| Straw, 3/4 bale..... | 75 @ 1 10 |

Mills and Mills.

Bran is in fairly liberal supply and market lacks firmness. Middlings are not in heavy stock, but there is a sufficiency for the demand. Rolled Barley and Milled Corn were without appreciable change as regards quotable values, but market was not firm.

| | |
|---------------------|---------------|
| Bran, 3/4 ton..... | 19 00 @ 20 00 |
| Middlings..... | 20 00 @ 24 00 |
| Barley, Rolled..... | 28 50 @ 29 00 |
| Cornmeal..... | 25 00 @ 25 50 |
| Cracked Corn..... | 26 00 @ 26 50 |

Seeds.

Scarcely anything doing in this line and of most varieties there is very little stock upon which to operate. Mustard Seed is now offering only in a very small way. Flaxseed makes a slim showing, with market in favor of sellers. There is plenty of Alfalfa, but no demand for the same. Bird seeds are offering in moderate quantities at unchanged figures.

| | |
|----------------------------|---------------|
| Mustard, Yellow..... | 3 25 @ 3 50 |
| Mustard, Trieste Seed..... | 3 50 @ 3 75 |
| Mustard, Wild Brown..... | 2 75 @ 3 25 |
| Flax..... | 2 25 @ — |
| Canary..... | 2 1/4 @ 2 1/2 |
| Rape..... | 2 1/4 @ 2 1/2 |
| Hemp..... | 2 1/4 @ 2 1/2 |
| Alfalfa, Utah..... | 3 @ 3 1/2 |

Bags and Bagging.

Grain Bag market is flat, there being a total lack of inquiry. Values remain nominally as last noted, but to effect sales lower figures would have to be accepted. Wool Sacks are in more than ample supply for existing requirements and market is easy at the quotations. In values of other bags there are no changes to record.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, 22x36, spot..... | 5 1/4 @ — |
| State Prison bags, per 100..... | 5 30 @ — |
| Wool sacks, 4 lb..... | 30 @ — |
| Wool sacks, 3 1/2 lb..... | 27 @ — |
| Gunnies..... | 9 @ — |
| Bean bags..... | 4 1/2 @ 4 1/2 |
| Fruit sacks, cotton..... | 5 1/4 @ 6 |

Hides, Pelts and Tallow.

The Hide market presents a quiet air, and is not especially firm, although former quotations remain in force. Pelt market has been devoid of strength, arrivals lately having been decidedly liberal. Tallow remained as last quoted, with no special surplus of the same.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | |
|-------------------------------------|-------------|
| Heavy Steers, over 55 lbs..... | — @ 9 |
| Medium Steers, 48 to 55 lbs..... | — @ 8 |
| Light Steers, under 48 lbs..... | — @ 7 1/2 |
| Heavy Cow Hides, over 50 lbs..... | — @ 8 |
| Light Cow Hides, under 50 lbs..... | — @ 7 1/2 |
| Wet Salted Kip..... | — @ 9 1/2 |
| Wet Salted Veal..... | — @ 9 |
| Wet Salted Calf..... | — @ 9 |
| Dry Hides..... | — @ 10 1/2 |
| Dry Kip and Veal, 11 to 16 lbs..... | 16 @ 16 1/2 |
| Dry Calf, under 4 lbs..... | 18 @ 30 |
| Horse Hides, large..... | 2 25 @ 2 75 |
| Horse Hides, medium..... | 2 00 @ 2 25 |
| Horse Hides, small..... | 25 @ 50 |
| Colts' Hides..... | 25 @ 50 |
| Pelts, long wool, per skin..... | 90 @ 1 15 |
| Pelts, medium, per skin..... | 70 @ 90 |
| Pelts, short wool, per skin..... | 40 @ 60 |
| Pelts, shearling, per skin..... | 15 @ 30 |
| Deer Skins, best summer..... | 25 @ 30 |
| Deer Skins, good medium..... | — @ 20 |
| Deer Skins, thin winter..... | — @ 10 |
| Elk Hides..... | 10 @ 12 |
| Tallow, good quality..... | 3 @ 3 1/4 |
| Tallow, No. 2..... | 2 @ 2 1/4 |
| Goat Skins, perfect..... | 30 @ 37 1/2 |
| Goat Skins, damaged..... | 10 @ 30 |
| Kid Skins..... | 5 @ 10 |

Honey.

Market is virtually bare of Extracted and

Some men won't advertise when they are busy—think it will last forever.
Some men won't advertise when times are dull—think the crack of doom is just about to the city line.
There are others who advertise all the time.
The latter attract inquiries and orders, and in good times can pick what they want.
In dull times they get all there is going—the other fellow is out of business.
One is an optimist in prosperity, a pessimist in adversity, and a narrow-gauge weakling all the time.
The other is just a plain, common-sense business man.

Two Kinds of Men.

WHICH KIND ARE YOU?

there is no great quantity of Comb offering. Values are well sustained, with immediate trading mostly on local account. Inquiry is being made from the Hawaiian Islands as to the prospects here for a market for honey from that locality.

Extracted, White Liquid..... 5 1/2 @ 6
Extracted, Light Amber..... 4 1/2 @ 5 1/2
White Comb, 1-lb frames..... 8 1/2 @ 10
Amber Comb..... 6 1/2 @ 7 1/2

Beeswax.

Supplies are too light to admit of much trading. Quotable values remain as before, but higher figures are exacted in a small way.

Fair to choice, 1 lb..... 24 @ 26

Live Stock and Meats.

Beef market was without marked improvement. Demand was a little better, but offerings were larger than ordinarily for this time of year. Mutton and Lamb were in more than ample receipt for current requirements, and rather low figures prevailed. Hogs continued to arrive quite freely, but were mostly too small or were decidedly poor. Only hard, grain-fed hogs of medium to large size were sought after or commanded anything near satisfactory figures.

Beef, 1st quality, dressed, net 1 lb..... 6 @ 6 1/2
Beef, 2d quality..... 5 @ 5 1/2
Beef, 3d quality..... 4 @ 5
Mutton—ewes, 7 1/2 @ 8c; wetters..... 8 @ 8 1/2
Hogs, hard grain fed, medium..... 3 1/2 @ 4
Hogs, small..... 3 1/4 @ 3 1/2
Hogs, large hard..... 3 1/2 @ 3 1/2
Hogs, soft..... 2 1/2 @ 2 1/2
Hogs, stock..... 2 @ 2
Hogs, country dressed..... 4 1/4 @ 4 1/2
Veal, small, 1 lb..... 4 @ 6
Veal, large, 1 lb..... 4 @ 6
Lamb, Yearling, 1 lb..... 8 @ 8 1/2
Lamb, Spring, 1 lb..... 8 @ 8 1/2

Poultry.

Old fowls of every description were in excessive receipt and went at low prices. Hens sold down to \$3 per dozen, and then did not meet with very prompt sale. Market for Turkeys, old Ducks and Geese also tended decidedly in favor of buyers most of the week. Large and fine young stock remained in light supply and brought fully as good figures as previously quoted. Very small Broilers and small young fowls of every sort met with poor custom, market being weak at the low quotations.

Turkeys, dressed, 1 lb..... @ —
Turkeys, live hens, 1 lb..... 11 @ 12
Turkeys, live gobblers..... 11 @ 12
Hens, Cal., 1 doz..... 3 50 @ 4 00
Roosters, old..... 3 50 @ 3 75
Roosters, young, (full-grown)..... 7 50 @ 8 50
Fryers..... 5 50 @ 6 50
Broilers, large..... 4 00 @ 5 00
Broilers, small..... 2 00 @ 3 50
Ducks, young, 1 doz..... 4 00 @ 5 50
Ducks, old..... 3 00 @ 3 50
Geese, 1 pair..... 1 00 @ 1 25
Goslings, 1 pair..... 1 50 @ 2 00
Pigeons, Old, 1 doz..... 1 25 @ —
Pigeons Young..... 1 50 @ 1 75

Butter.

There has been further shading of rates to buyers of creamery product since last review, there being little inclination to pack at current figures, and there being more than enough of above description for immediate requirements. Dairy butter did not come forward very freely, and values for the same were tolerably well sustained, although market could not be termed firm. Eastern butter is being landed here at lower figures than same grade of local product is commanding.

Creamery extras, 1 lb..... 19 1/4 @ 20
Creamery firsts..... 19 @ 19 1/4
Creamery seconds..... 18 1/4 @ 19
Dairy select..... 18 1/4 @ 19
Dairy seconds..... 18 @ —
Dairy, soft and weedy..... @ —
Mixed store..... 16 @ 17
Creamery in tubs..... 19 @ 22
Pickled roll..... @ —
Dairy in tubs..... @ —
Firkin, Cal., choice to select..... 19 @ 21
Firkin, common to fair..... 16 @ 18

Cheese.

Supplies in the wholesale depots are showing some increase, with the demand not very brisk at full current rates. Market can hardly be said to be quotably lower, although to effect free sales moderate concessions would have to be granted buyers.

California fancy flat, new..... 9 1/4 @ 10
California, good to choice..... 9 @ 9 1/4
California, fair to good..... 8 @ 9
California Cbeeddar..... 10 @ 11
California, "Young Americas"..... 10 @ 11

Eggs.

Demand has been of a rather slow order, and receivers have found it difficult to keep stocks down to sufficiently small proportions to give the market a healthy tone. Values for best qualities were sustained at about same range as preceding week, with occasional sales of favorite brands at a slight advance on quotations. The tendency on strictly choice to select from this time forward will doubtless be to more firmness, while seriously defective qualities will drag at lowest quotations.

California, select, large white and fresh..... 13 1/4 @ —
California, select, irregular color & size..... 12 1/4 @ 13
California, good to choice store..... 11 1/4 @ 12
California, common to fair store..... @ —
Oregon, prime..... @ —
Held Eastern, as to section and grading..... 12 1/4 @ 13 1/4
Local Cold storage eggs..... @ —

Vegetables.

Most descriptions of spring and early summer vegetables were in better supply than for preceding week, and quotations were at a lower range almost throughout the entire list. Asparagus, Peas, Rhubarb and Tomatoes were in largest receipt. Onion market was lightly stocked with choice old, and such continued to command good prices. New Red Onions are now in fair receipt and the quality of offerings is daily improving.

Asparagus, No. 1 to choice, 1 box..... 1 25 @ 1 75
Asparagus, common to fair, 1 box..... 65 @ 1 00

Beans, String, 1 lb..... 7 @ 8
Beans, Lima, 1 lb..... @ —
Beans, Refuge, 1 lb..... @ —
Beans, Wax, 1 lb..... 15 @ 20
Cabbage, choice garden, 100..... 65 @ 75
Cauliflower, 1 doz..... 50 @ —
Corn, Green, 1 sack..... @ —
Corn, Alameda, 1 crate..... @ —
Cucumbers, bot house, 1 doz..... 40 @ 1 00
Egg Plant, 1 lb..... @ —
Garlic, 1 lb..... @ —
Mushrooms, Buttons, 1 lb..... @ —
Mushrooms, Wild, 1 lb..... @ —
Okra, Dried, 1 lb..... 12 1/4 @ 15
Onions, Yellow, good to choice..... 2 00 @ 3 00
Onions, New Red..... 1 00 @ 1 25
Peas, Sweet, Garden, 1 lb..... 2 @ 2 1/4
Peas, Green, 1 sack..... 75 @ 1 00
Peppers, Green Chile, 1 lb..... 15 @ 20
Rhubarb, ordinary, 1 box..... 50 @ 65
Rhubarb, Mammoth, 1 bx..... 75 @ 85
Squash, Summer, 1 lb..... @ —
Tomatoes, 1 box or crate..... 1 00 @ 1 50

Potatoes.

The season for Old Potatoes is rapidly drawing to a close, and it will be a question of only a few weeks when good to choice New will be in fairly liberal supply and will receive the bulk of attention. The market for Old this week tended against sellers, while for desirable New moderately firm prices were realized. Offerings of Old were principally Oregon Burbanks, which sold mainly within range of 50 @ 70c.

Early Rose, River, 1 cental..... @ —
Peerless, River..... @ —
Reds River..... @ —
Garnet Chille, Mission..... @ —
Burbanks, Salinas..... @ —
Burbanks, River, 1 sack..... 45 @ 55
Burbanks, Petaluma and Tomales, 1 ct..... 45 @ 55
Burbanks, Humboldt, 1 ct..... 50 @ 70
Burbanks, Oregon, 1 cental..... 45 @ 75
Garnet Chille, Oregon..... @ —
New Potatoes, 1 lb..... 1/4 @ 1 1/4
Sweet River, 1 cental..... @ —
Sweet Merced..... 1 00 @ 1 35

The Fruit Market.

Fresh Fruits.

There was some increase in the arrivals of early summer fruits, but at the same time the display was not large for this date. Strawberries made the best showing. Recent receipts of berries have included some of excellent quality. Values have declined materially for this fruit within the week, leaving prices at the decline within reach of the vast majority of consumers. Gooseberries were forwarded from interior points in limited quantity, the supply being so small as to make them hardly quotable in a regular way. Blackberries were on market, but not in sufficient amount to enable many people to indulge in them. They sold mainly at 15c per pound basket. Currants are expected before the close of the week. Cherries did not arrive in heavy quantity, and were mostly ordinary quality, being small and otherwise under the standards of choice to select. Fine qualities did not lack for custom at good prices. Black Cherries which were about perfect sold up to \$2.50 per 10-lb. box, but this figure was too high to warrant naming it as a regular quotation. Some common White and Red Cherries were not quotable over 50c per box. Apples of last crop, mostly out of cold storage, continue to be offered at same figures current for some weeks past.

Apples, fancy, 4-tier, 1 box..... 1 25 @ 1 40
Apples, choice, 4-tier, 1 box..... 75 @ 1 00
Apples, fair to good, 50-lb box..... 50 @ 75
Apples, common to fair, 1 box..... 25 @ 50
Cherries, Black, fair to choice, 1 box..... 75 @ 1 50
Cherries, White and Red, 1 box..... 40 @ 65
Gooseberries, 1 drawer..... 40 @ 60
Strawberries, Longworth, 1 chest..... 3 00 @ 4 00
Strawberries, Large, 1 chest..... 3 00 @ 3 50

Dried Fruits.

In the market for cured and evaporated fruits continued active inquiry is being experienced for prunes, with values fully half a cent higher than at date of former review. The size which had been most neglected—60-70s—and which a week ago was not quotable over 2 1/4c, has since been placed at 3 1/4c. Some small and sugared went at 2 1/4c. The four sizes are not now readily obtainable under 3 1/4c. There are very few 40-50s offering, and 6c is about the lowest price holders are inclined to accept for prime stock at this date. Peaches are ruling firmer for best qualities, a quotable advance of half a cent per pound being recorded for "choice." There are some dark-colored and inferior, however, for which buyers do not bid over 2c. Apples are inclining in favor of sellers, evaporated in boxes having been marked up half a cent. Apricots remain steady at last quoted range. Choice to select pears are not offering freely, and are quotable at 6 @ 7c, while on low grade 2 1/2 @ 3 1/2c may be said to represent full current values. Nectarines are in poor request at the low quotations noted, market lacking firmness. Shipments of dried fruit for the week include 44,200 lbs. to British Columbia per Monday's steamer.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, per lb..... 6 @ 7
Apricots, Royal, fancy..... 7 1/2 @ 8 1/2
Apricots, Moorpark..... 8 @ 10
Apples, in boxes..... 6 1/2 @ 7
Figs, fancy pressed..... 8 @ 10
Nectarines, White..... 3 1/4 @ 4
Nectarines, Red..... 3 1/4 @ 4
Peaches, unpeeled, choice..... 4 1/2 @ 5
Peaches, unpeeled, fancy..... 5 @ 6
Peaches, peeled, in boxes..... 9 @ 12
Pears, unpeeled Bartlett's, baled, fancy..... 7 @ —
Pears, halved, unpeeled Bartlett's..... 4 1/2 @ 6
Pears, peeled and sliced..... 4 @ 5
Plums, pitted..... 4 @ 5
Prunes, in sacks, 40-50's..... 5 1/2 @ 6
50-60's..... 4 1/4 @ 4 1/2
60-70's..... 3 1/2 @ 3 3/4
70-80's..... 3 @ 3 1/4
80-90's..... 2 1/2 @ 3
90-100's..... 2 @ 3
Above figures are on basis of 3 1/4 @ 3 1/2c for 4 sizes. Prunes in boxes, 1/4c higher for 25-lb boxes, 1/4c higher for 50-lb boxes.
4 sizes Santa Claras and equal..... 3 1/4 @ —
4 sizes San Joaquin and Northern..... 3 @ —
Prunes, Silver..... 4 @ 7

COMMON SUN-DRIED.

Apricots, ordinary..... 5 @ 6
Apples, sliced..... 4 @ 4 1/4
Apples, quartered..... @ —
Figs, Black..... 2 @ 3 1/4
Figs, White..... 3 @ 4
Peaches, unpeeled..... 3 1/4 @ 4
Plums, unsplit..... 1 @ 1 1/4

The following review of the dried fruit market is from a New York authority, the report being furnished by recent mail:

Evaporated apples have had more attention during the past week, and with moderate offerings stock has been held with more confidence, though prices show no material change; strictly prime are not obtainable under 8c, and some high-grade stock is held higher, with choice jobbing from 8 1/4 @ 8 1/2c and fancy to extra fancy 8 1/2 @ 9 1/4c. Some fruit grading under prime is offered at 7 1/4c, and common to fair grades range from 4 @ 7c. Sun-dried in moderate supply but held steadily at about late prices, though outside figures are extreme and realized only for very choice stock. Chops have had more attention and rule firm at 3 1/4 @ 3 1/2c, with some business at \$3.00 @ 4, though latter figure extreme. Stock in bags would have to go lower, probably about 3 1/4c. Cores and skins have also had more demand and generally held at 2 1/4c. Small fruits in light supply, but in few bands, and held at full late prices. California fruit continues active and firm.

Apricots, Cal. Moorpark, 1897, per lb..... 8 @ 12
Apricots, Cal. Royal, 1897, per lb..... 6 1/2 @ 8 1/2
Peaches, Cal., 1897, peeled, per lb..... 10 @ 16
Peaches, Cal., 1897, unpeeled, per lb..... 5 @ 9
Pears, Cal., 1897, per lb..... 5 @ 10
Prunes, Cal., 1897, per lb..... 3 @ 8

Raisins.

Market for layers is moderately firm at former figures, with few offering. Some business has been done in loose raisins on local account at 2 1/4c for 3-crown and 2c for 2-crown. Eastern dealers are making some inquiry, which looks as though stocks in the East are being cleaned up.

F. O. B. FRESNO DELIVERY.

Imperial Clusters, per box..... @ —
Debesa Clusters, per box..... @ —
Fancy Clusters, per box..... @ —
Boxes, London layers, 20-lb box..... 1 00 @ —
(Usual advance for fractions.)
Loose Muscatel, 4-crown, 1 lb..... 3 1/2 @ —
Loose Muscatel, 3-crown..... 2 1/4 @ 2 1/2
Loose Muscatel, 2-crown..... 1 1/2 @ 2
Sultanas..... 3 @ 3 1/4
Seedless Muscatel..... 1 1/2 @ 2
Dried Grapes..... 1 @ 1 1/4

Citrus Fruits.

Orange market was more liberally stocked with Navel and these ruled lower. Choice Seedlings were in limited receipt and brought former figures. Lemons were in more than ample supply for the demand and easy prices prevailed. Grape fruit was offered as low as \$2 per box. Limes were fairly steady.

Oranges—Navel 1 box..... 1 50 @ 2 50
St. Michaels..... @ —
Seedlings..... 75 @ 1 25
Tangerines, half box..... @ —
Lemons—Cal., select, 1 box..... 1 75 @ 2 00
Cal., good to choice..... 1 00 @ 1 50
Cal., common to good..... 75 @ 1 00
Limes—Mexican, 1 box..... 4 00 @ 4 50
Cal., small box..... 50 @ 75

Nuts.

Market is without special change. Almonds continue scarce. Walnuts are in fair supply. Peanuts are in limited stock and choice are in good request.

California Almonds, paper shell..... 9 @ 10
California Almonds, soft shell..... 6 @ 8
California Almonds, hard shell..... 4 @ 4 1/2
Walnuts White, paper shell..... 6 1/2 @ 7
Walnuts White, soft shell..... 6 1/2 @ 7
Walnuts White, Cal., standard..... 5 @ 6
Chestnuts, Cal. Italian..... @ —
Peanuts, Cal., fair to prime..... 4 @ 4 1/4
Peanuts, Eastern hand-picked..... 5 @ 6
Pine Nuts..... 7 @ 8

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|--------------------|--------------------|----------------------|
| Flour, 4-sks..... | 128,455 | 4,413,488 |
| Wheat, cts..... | 43,255 | 9,782,972 |
| Barley, cts..... | 35,112 | 4,323,243 |
| Oats, cts..... | 22,385 | 619,924 |
| Corn, cts..... | 21,920 | 299,940 |
| Rye, cts..... | 938 | 39,656 |
| Beans, sks..... | 7,131 | 530,052 |
| Potatoes, sks..... | 21,840 | 994,719 |
| Onions, sks..... | 916 | 95,302 |
| Hay, tons..... | 1,185 | 110,506 |
| Wool, bales..... | 2,316 | 63,358 |
| Hops, bales..... | 36 | 8,578 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------|--------------------|----------------------|
| Flour, 4-sks..... | 42,128 | 2,890,016 |
| Wheat, cts..... | 65,150 | 9,555,948 |
| Barley, cts..... | 5,879 | 2,983,570 |
| Oats, cts..... | 968 | 16,884 |
| Corn, cts..... | 968 | 37,712 |
| Beans, sks..... | 1,576 | 290,938 |
| Hay, bales..... | 835 | 73,156 |
| Wool, lbs..... | 14,199,776 | 13,864,249 |
| Hops, lbs..... | 6,333 | 1,310,122 |
| Honey, cases..... | 58 | 7,201 |
| Potatoes, pkgs..... | 761 | 179,306 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, May 4.—California dried fruits firm; other fruits steady. Evaporated apples, common, 7 @ 7 1/2c; prime wire tray, 8 1/4c; wood dried prime, 8 1/4c; choice, 8 1/2c; fancy, 9 @ 9 1/2c. Prunes, 3 1/4 @ 8c; 1 lb. Apricots, Royal, 6 1/4 @ 8c; Moorpark, 8 1/4 @ 10c. Peaches, unpeeled, 6 @ 8c; peeled, 11 @ 14c.

A GOOD CHEAP FARM WAGON.



In order to introduce their low metal wheels with wide tires, the Empire M. G. Co., Quincy, Ill., have placed upon the market a farmer's handy wagon, sold at the low price of \$19.95. The wagon is only 25 inches high, fitted with 24 and 30-inch wheels, with 4-inch tires. This wagon is made of best material throughout, and fully guaranteed for one year. Catalogue giving full description will be mailed upon application to the manufacturers, who also furnish metal wheels at low prices, made any size and width of tire to fit any axle.

Anthrax and Black Leg.

Our issue of November 27th last contained an interesting and instructive article in regard to the cause, symptoms and treatment of these diseases. Anthrax attacks cattle, horses, mules, sheep and even goats, while Black Leg, or quarter evil, is most often met with in cattle. Young animals between the age of six months and two years are most susceptible to infection. Both complaints exist to a greater or less extent throughout the United States.

The preventive treatment of Black Leg and Anthrax by vaccination with the Pasteur Vaccines has been most extensively and successfully practiced in Europe during the past twelve years, during which time about twenty millions of animals have been treated, and the loss of live stock, previously so heavy, has now been reduced to an infinitesimal sum. These Vaccines were introduced into the United States some three years ago, and have met with success—a success, if possible, greater than that accomplished even in European countries. It is stated that about 400,000 head of cattle have been successfully treated.

The Pasteur Vaccines for Anthrax and Black Leg are supplied in this country by the Pasteur Vaccine Company, of Paris, France, whose headquarters in the United States are located at 54 Fifth Avenue, Chicago.

Sheep Book Free.

"Owing to the unprecedented demand for that popular little book, 'Sheep in America,' the manufacturers of Zenolium Sheep Dip, The Zenner-Raymond Disinfectant Company, No. 37 Atwater Street, West, Detroit, Michigan, have revised and enlarged the work, which will contain much new matter, including an article on 'Sheep Scab' from Prof. C. P. Gillette, M. S. The book is handsomely bound in red and gold and elaborately illustrated, showing typical representatives of each breed of sheep, and the articles are by leading authorities, usually an official of the association. To all of our readers who mention this paper they will be glad to send a copy absolutely free. Otherwise the price will be twenty-five cents."

Tank Lumber.

We desire to call your attention to the advertisement of R. F. Wilson of Stockton, Cal. He informs us that, having bought a cargo of lumber for tanks at a very reasonable price, he is quoting prices that cannot be met. He is also having a big run in irrigating windmills and pumps. Write him for prices.

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PACIFIC RURAL PRESS,

330 Market Street, San Francisco, Cal.

California's Gold Yield for 1897.

Through the courtesy of Charles G. Yale, statistician of the U. S. mint at San Francisco, the following is published herein:

The superintendent of the U. S. mint in this city has forwarded to the director of the U. S. mint at Washington the report on the product of the precious metals in California for the calendar year 1897. This report is based on the returns received from producers in answer to inquiries sent out from the local mint. As compared with figures obtained from the same source in 1896, the gold yield of the State shows a falling off of \$1,310,161, while the silver shows an increased product of \$30,325, commercial value, making the total decrease for the year 1897 from the preceding one \$1,279,830. The yield of the State by counties is as follows:

PRODUCT OF CALIFORNIA BY COUNTIES, 1897.

RECAPITULATION.

| County— | Gold. | Silver. | Total. |
|----------------------|--------------|-----------|--------------|
| Amador..... | \$ 1,324,473 | \$ 3,477 | \$ 1,327,950 |
| Butte..... | 667,025 | 7,885 | 674,910 |
| Calaveras..... | 1,430,861 | 1,745 | 1,441,606 |
| Del Norte..... | 16,710 | ..... | 16,710 |
| El Dorado..... | 674,626 | 886 | 675,512 |
| Fresno..... | 43,144 | ..... | 43,144 |
| Humboldt..... | 94,092 | 57 | 95,049 |
| Inyo..... | 159,840 | 50,063 | 209,903 |
| Kern..... | 754,313 | 10,471 | 764,784 |
| Lassen..... | 49,100 | 850 | 49,950 |
| Los Angeles..... | 40,698 | ..... | 40,698 |
| Madera..... | 85,953 | ..... | 85,953 |
| Mariposa..... | 451,427 | 680 | 452,087 |
| Mono..... | 520,101 | 72,401 | 592,502 |
| Nevada..... | 1,885,251 | 8,116 | 1,893,367 |
| Placer..... | 1,524,941 | 6,784 | 1,531,725 |
| Plumas..... | 339,252 | 701 | 339,953 |
| Riverside..... | 147,327 | 4,000 | 151,327 |
| Sacramento..... | 93,050 | ..... | 93,050 |
| San Bernardino..... | 100,373 | 51,407 | 151,780 |
| San Diego..... | 592,328 | ..... | 592,328 |
| San Luis Obispo..... | 2,500 | ..... | 2,500 |
| Santa Barbara..... | 3,000 | ..... | 3,000 |
| Shasta..... | 569,071 | 96,869 | 665,940 |
| Sierra..... | 370,208 | 46 | 370,254 |
| Siskiyou..... | 812,123 | 34 | 812,157 |
| Stanislaus..... | 37,392 | ..... | 37,392 |
| Trinity..... | 1,078,372 | 259 | 1,078,631 |
| Tulare..... | 12,830 | 214 | 13,044 |
| Tuolumne..... | 1,899,572 | 1,695 | 1,811,268 |
| Yuba..... | 141,638 | ..... | 141,638 |
| Undistributed..... | ..... | 131,073 | 131,073 |
| Totals..... | \$15,871,401 | \$452,789 | \$16,324,190 |

In 1896 there were seven counties of the State which produced over a million dollars, and one of these yielded over two millions. In 1897 there were but six of the million dollar counties, and none of them reached the two million mark. Nevada county, which held the place of honor in 1896 in bullion product, still maintains its position in 1897; but Tuolumne county, which ranked No. 7 in 1896, takes second place this year, displacing Placer, which is now third on the list. Calaveras, which was third, is now fourth in rank. Amador also drops back one place, being now fifth instead of fourth. Trinity, which was fifth last year, is sixth in 1897, holding the place that Siskiyou did the previous year, the latter county dropping out of the list of million dollar producers for the time at least.

Investigation has been made into the origin of bullion—whether from alluvial washings or veins. It is found that vein mining very greatly leads not only

one but all forms of gold washing combined. The figures for California in 1897 are as follows:

Quartz mining, \$11,390,130; surface placers, \$2,379,914; hydraulic mines, \$1,351,088; and drift mines, \$1,203,058. In the quartz total is included the silver output of \$452,789 (commercial value). From copper ores (included in the quartz column) the product of gold was \$149,406, and of silver \$95,928. From the silver-lead ores, mainly in Inyo and Mono counties, the gold product was \$44,801 and the silver \$54,100.

Deducting these amounts of silver derived from the lead and copper ores, the remainder of the total was obtained by separation from the gold derived from quartz, placer, hydraulic and drift mines—that is, of the total gold, \$194,207 was derived from copper and lead ores and \$150,028 silver was derived from the same source.

Figures collected by the Mint also show approximately the number of men engaged in precious-metal mining in the State for the year 1897. The number given is 16,783, as compared with 16,790 in the previous year.

In connection with the conflict between Spain and this country results another fight of some significance, namely, one between medical science and the yellow fever. The United States Army medical corps has organized to fight that foe, and looks forward with the same hope of victory entertained by the soldiers to vanquishing the scourge of yellow fever when our troops are exposed to its contact. One of the most effective measures relied upon in this instance is the erection of a distilling plant, the daily capacity of which will be 100,000 gallons of water, at Key West, and the construction of steel tanks whereby the water may be carried to the fleet wherever the army or navy go, the idea being that the furnishing of pure water will go far toward prevention of yellow fever. Some anxiety has been felt regarding the possibility of a yellow fever epidemic, resultant upon the return of troops from Cuba carrying it back to this country; but the medical corps say that, with the precautions they are adopting, such a contingency is very remote. At Key West are being established hospitals for the use of United States troops, and the fever is looked upon as furnishing as good an opportunity for a victory for science as for the more noisy fighters by land and sea.

THE cry of a magician in Aladdin, "New lamps for old!" is matched in a story told by M. Philippe of Paris. It appears that a Russian loan of fifty million francs was taken up by Rothschild in 1836. M. Poizat, a French chemist, discovered that the older Russian silver coins contained a large proportion of gold, and he having entered into relations with Rothschild's, the latter stipulated that the loan should be repaid in old silver. The unsuspecting Czar acceded, the wily chemist recovered the gold from the melted silver, and shared the profit with Baron Rothschild. The Emperor Nicholas subsequently learned the fact and sent for M. Poizat to St. Petersburg to install a similar laboratory to deal with the remaining old coinage, from which expedition the French chemist returned loaded with honors. This recalls the fact that Dr. Emmens makes argentaurum from Mexican dollars, probably of primitive manufacture.

"Contraband of War."

The story of a coal famine in San Francisco need not cause much worry for the present, even if the article has been declared a contraband of war. No one believes that the war with Spain is to last very long. A naval war must of necessity be of short duration. When the fleets of the United States and Spain clash, the work of capture or destruction will be quick and decisive. A more serious complication is the little inducement to send ships to San Francisco this year on account of the poor outlook for grain cargoes. But even if California should have no grain for export next summer and fall, the large number of ships that will be required for Oregon and Washington will compel a large coal fleet to come to the coast, and thus there is a good prospect that we shall have the usual supplies of European and Australian coal. Besides, the coal supplies of this coast are quite adequate to our wants without a cargo from other places.—S. F. Bulletin.

Coal has never been definitely decided upon as a fixed contraband of war, although this country passed a law in May, 1862, declaring it so. Prior to the civil war there never had been necessity for agreement upon coal. International lawyers are divided upon this point, but generally admit that as England has recently declared coal to be contraband other nations will take like action should occasion arise.

Chief Justice Chase ruled that contraband goods are divided into three classes: First, articles manufactured for military purposes; second, articles which may be used for war or peace, according to circumstances; third, articles exclusively used for peaceful purposes. In order to constitute contraband of war it is necessary that there should be hostile quality and a hostile destination. Where non-contraband articles are part of a cargo with contraband goods, they may be seized. Collectors of customs may refuse clearance papers to ships of any nation destined for enemies' ports.

The following articles are recognized as contraband of war: Cannon, firearms, rosin, sail cloth, clothing for uniforms, hemp and cordage, ship lumber, tar and pitch, ardent spirits, iron, lead, copper, tin, brass, wire, platinum, horses, printing presses, paper, postage stamps, sulphuric acid, zinc, marine engines and like machinery.

Provisions sent to belligerents are not in general deemed contraband unless destined for military use. Corn, flour and meal are only contraband in siege, blockade or investment. Money sent to belligerents for payment of goods purchased is not contraband, but is if sent to assist belligerent operations. Cotton was considered contraband during the civil war, as it was used as collateral.

THE desirability of bringing all scientific facts into relation with a single "international" standard of latitude cannot be too strongly insisted upon. It has often been pointed out that there are many discrepancies in "accurate" statements of boiling temperatures, absolute weights, etc., due to the want of a universal standard latitude, with regard to which "normal" barometric pressure should be fixed.

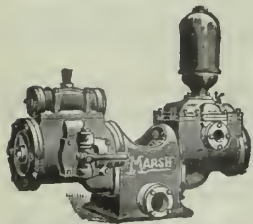
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Holding Power of Wire and Cut Nails.

Before the Technical Society of the Pacific Coast in San Francisco, Prof. Soule of the University of California recently read a paper on the holding power of nails from data obtained by tests with wire and cut nails, driven in Douglas spruce (Oregon pine) and in redwood.

The points which it was particularly desired to clear up by these tests were:

The relative merits of cut and of wire nails; the merits of different surfaces on the nails; the best shape of nails, as to points, etc.; the relative holding powers of these nails in Douglas spruce and in redwood; the best relation between the length of nail and the thickness of the board nailed by it; the effect of time upon the holding power of nails in the cases of the kinds of timber above named.

The conclusions formed from a consideration of the results of the tests are as given below:

1. Cut nails, for the same area, hold better than wire nails.

2. The holding strength increases with the length of the nail, but not according to any simple law.

3. The pointing of the wire nail adds about 100 per cent to its efficiency. If slightly more pointed than they are made at present, the holding power would be increased.

4. Pointing the cut nail adds 33 per cent to its efficiency, but it increases the tendency to split the wood. To avoid splitting, the taper side only of the cut nail might be wedged. If wedged on all four sides it holds best.

5. Cut nails driven with wedge across the grain are only about 80 per cent as strong as those driven with the wedge parallel to the grain. This fact does not accord with practice in driving, probably on account of the greater tendency to split the wood.

6. A nail is three times as strong when driven into the side of a beam—that is, across the grain—as it is driven into the end of it—that is, parallel to the grain.

7. The holding power of nails increases with time in the case of redwood. It is asserted by some that the tannic acid rusts the nail and thus increases its holding power. It is probable that this effect would be extended over a few months only, after which the further rusting of the nail would weaken it. The effect of time in the case of cement nails does not seem to be great, and is only slightly greater in the case of wire nails, but is very considerable for cut nails.

8. The tests show that all these nails lose holding power with time when driven into Douglas spruce. This probably may be accounted for by the small lateral adhesion of the fibers in that wood and their gradual yielding to the wedge action of the nail. In other words, they pinch the nail less with time, but it seems unlikely that this diminution would continue indefinitely.

9. In redwood a cut nail holds slightly better than a wire nail.

10. In Douglas spruce, the cement nails are 1.3 times stronger than the wire nails.

11. A cement nail is slightly stronger than a wire nail when driven into redwood, but the difference in strength is small.

12. Under shearing stress cut nails are 1.4 times stronger than wire nails. There seems to be no difference in the resistance of the nails to shear in using blocks of Douglas spruce or of redwood.

13. When nailing cleats to a block

the same area of nail in the wood will hold about the same stress, whether a few large nails are used or more small ones. The superiority, if any, is in favor of the larger nail.

14. The cut nail holds 1.33 better in Douglas spruce than in redwood; the wire nail about the same in each, with a slight superiority in favor of redwood.

15. The holding power of a nail is not directly proportional to its surface in contact with the wood. In determining the relative holding powers, the stress per unit area has been employed, but as far as possible nails have been taken as nearly alike as practicable, so as to eliminate the error introduced by this method.

16. In drawing a nail, the pull seems to reach a maximum shortly after the nail starts.

17. In the case of a wire nail, the applied stress increases gradually; of a cut nail, by jerks and starts. The decrease of holding in wire nails after reaching the maximum is gradual, while in cut nails it falls off suddenly. Hence, a cut nail is not as efficient in holding together pieces of timber subject to vibration as is the wire nail, for the former is more easily loosened, and, being partly withdrawn, loses much of its strength. This results from the fact that the major portion of the resistance comes from the wedge sides of the nail.

18. Cut nails are more likely to split Douglas spruce, and wire nails to split redwood.

19. In shearing a cleat from a block to which it is nailed, a maximum resistance is obtained for a cleat the thickness of which is two-fifths of the length of the nail used. This agrees closely with the practice of using a nail about $2\frac{1}{2}$ times the thickness of the thinner piece nailed.

20. A slight roughness on the surfaces of a nail is of advantage.

21. The cut nail is more efficient when driven into Douglas spruce, but the wire nail is more so in redwood. This fact bears out the theory as to the manner in which a wire nail holds. The lateral pressure of the redwood fibers is greater than that of the fibers of Douglas spruce, on account of the closeness of the grain of the redwood, it having thirty-six annular rings to the inch, as against fourteen for the spruce; and this holds true notwithstanding that the redwood is softer than the spruce.

The general conclusion from the tests was that, for most uses and under most conditions, the cut nail is superior to the wire nail.



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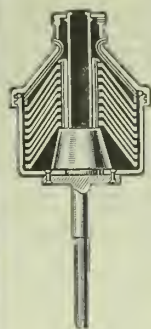


FIG. 1.

The Differences between Cream Separators

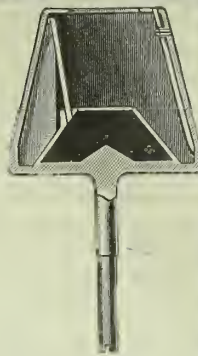


FIG. 2.

The cut on the left (Fig. 1) is that of a De Laval "Baby" separator bowl. It is of the improved "Alpha" disc type, which *protecting patents* prevent the use of in any other machine. It subjects the milk to centrifugal force in *thirty thin layers*. In consequence it has an actual capacity of 750 lbs. per hour, at a speed of 6,000 rev., and recovers 99 per cent. of the butter-fat in the milk. It is mounted within the finest operating machinery years of experience and the best of everything can produce.

The cut on the right (Fig. 2) is that of a typical "hollow" form of separator bowl. It is of the *patent expired* type the De Laval Company used up to five years ago and which its imitators use to-day. It subjects the milk to centrifugal force in *solid bulk*. It has a claimed capacity of 300 lbs. per hour, at a speed of 8,000 rev., and recovers 95 per cent. of the butter-fat in the milk. It is made cheaply, to sell cheaply.

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List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING APRIL 19, 1898.

- 602,796.—WAVE MOTOR—H. R. Alden, Portland, Oreg.
602,593.—MATCH IGNITER—Axelson & Gunn, Los Angeles, Cal.
602,594.—TRACTION ENGINE—D. Best, San Leandro, Cal.
602,798.—BALLOT BOX—H. Braasch, Los Angeles, Cal.
602,694.—ROPE CLAMP—A. R. Bradeen, Seattle, Wash.
602,496.—TRUNK HARNESS—H. Brunner, Jr., S. F.
602,595.—FOLDING TOILET PAPER—W. E. Coombs, San Jose, Cal.
602,698.—RAISIN SEEDER—C. S. Cox, Fresno, Cal.
602,735.—PUZZLE—F. H. Donaldson, Garvanza, Cal.
602,657.—STEAM TRAP—C. R. Franklin, S. F.
602,601.—SINGLE-TRACK RAILWAY AND CAR—J. Hopkirk, Oakland, Cal.
602,561.—KEY—B. J. Loomis, Los Angeles, Cal.
602,605.—CAR COUPLING—R. H. McCaughey, Campbell, Cal.
602,794.—ENGINE—J. Porritt, S. F.
602,793.—PRESERVING EGGS—F. C. Smith, Los Angeles, Cal.
602,492.—PUMP—C. G. White, Woodland, Cal.
602,611.—BOTTLE—G. H. Williams, Los Angeles, Cal.
602,548.—GAS REGULATOR—Williams & Sells, S. F.
28,485.—DESIGN—LUNCH BUCKET TOP—W. M. Robertson, S. F.
28,492.—DESIGN—BATTERY ELECTRODE—Taylor & Bergman, Spokane, Wash.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

SINGLE-TRACK RAILWAYS AND CARS.—James Hopkirk, Oakland, Cal. No. 602,601. Dated April 19, 1898. This invention relates to railways of that class in which a single line of track is supported at a height above the ground, so that cars may be suspended to travel upon these rails. It consists essentially of a frame-work upon which the track is supported above the surface of the ground, cars mounted in pairs upon opposite sides of the track and frame-work, trucks having wheels journaled at opposite ends adapted to travel upon the rails, transverse timbers centrally swiveled on the trucks extending through the opposite ends and upper part of each car, with hangers supported from these timbers extending downwardly into the cars, so that the weight of the latter is adjustably supported from the hangers. Horizontally journaled rollers are adapted to travel against rails fixed to the posts of the rail supporting frame-work at points in line with these rollers, to prevent too great a swaying of the cars when in rapid motion.

DEVICE FOR FOLDING TOILET PAPER.—Wm. E. Coombs, San Jose, Cal. No. 602,595. Dated April 19, 1898. This invention relates to a device which is adapted to cut continuous sheets of paper into desired lengths, folding the sheets to form packages with alternate sheets overlapping each other from alternate sides. It is especially designed to form packages of toilet paper which are afterwards placed in holders, from which the sheets are removable singly and independently. This paper is brought to the machine in continuous sheets from opposite sides and delivered to a common center, where they are laid alternately, one over the other, cutting the lengths double that of the packages to be formed and folded down, so that each sheet is alternately folded over the opposing one. This is effected by means of an oscillating or vibrating roller suspended from above the central portion of the apparatus, the paper being held by clamps, and by means of vertical movable casings and cutters therein the paper is severed to the proper lengths and afterwards folded by the reciprocating roller.

OIL VAPOR TRACTION ENGINE.—Daniel Best, San Leandro, Cal. No. 602,594. Dated April 19, 1898. This invention relates to an improvement in what are known as "traction engines." The object is to provide a self-propelled engine capable of drawing loads upon the roads, and which is especially adapted to be used in countries where water cannot be obtained in necessary quantities for the use of steam engines. The invention consists essentially of a frame with supporting and driving wheels having two sets of cylinders mounted in pairs thereon, each cylinder having the top and bottom of its open end formed with longitudinal slots or channels, cross-heads projecting from the pistons, slidable in the slots, and detachable connecting rods uniting the cross-heads, so that the cylinders of each pair may be used together or the rearmost piston disengaged, and only one pair be employed for light loads. Connections are made between the pistons and a crank shaft and intermediate gearing between the crank shaft and the driving wheels serve to transmit power thereto. A vertically disposed carburetor is connected with the adjacent ends of the cylinders, so that oil or other hydrocarbon vapor may be employed explosively in the engine cylinders, thus avoiding the use of a steam boiler, with its added weight and the water necessary for its operation. In order to keep the cylinders sufficiently cool, it is necessary to circulate water about them, and this water is conveyed through a cistern of pipes so as to be exposed to the atmosphere and its temperature reduced after each passage over and around the cylinders, thus maintaining the same body of water without any essential advantages. The gear is so arranged that dif-

ferent rates of speed may be produced and the apparatus very readily reversed to run in the opposite direction.

CAR COUPLING.—R. H. McCaughey, Campbell, Cal. No. 602,605. Dated April 19, 1898. This invention relates to improvements in apparatus for coupling cars, and it consists essentially of draw bars, fulcrumed and movable to or from each other in a horizontal plane, the bars having diagonally disposed meeting faces, so that the heads are separated to pass each other when they come in contact. The rear of these heads has hook-shaped projections which interlock when the bars are again brought into line after the heads have passed each other, and by means of weighted bell crank levers the draw bars are normally retained in the position of engagement. Suitable devices are connected with the draw bars to pull them apart, to allow the heads to disengage and pass each other when it is desired to uncouple the cars. The weights serve to return the parts to their normal position whenever they are released.

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Six lines or less in this directory at 50c per line per month.

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JERSEYS, HOLSTEINS & DURHAMS. Best Butter and Milk Stock. Thoroughbred Hogs and Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER SAXE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

JERSEYS—The best A. J. C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

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WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

MANHATTAN EGG FOOD, Red Ball Brand, at all grocers; or wholesale, Tillman & Bendel, S. F.

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ELIAS GALLUP, Breeder of Poland China Hogs, Hanford, Kings Co., Cal.

BERKSHIRE AND POLAND-CHINA HOGS, Best Stock; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

J. P. ASHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Swine.

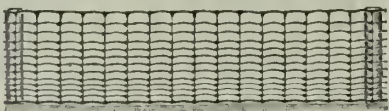
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J. B. HOYT, Bird's Landing, Cal. Importer and Breeder of Shropshire Sheep; also breeds Crossbred Merino and Shropshire Sheep. Rams for sale. Prices to suit the times. Correspondence solicited.

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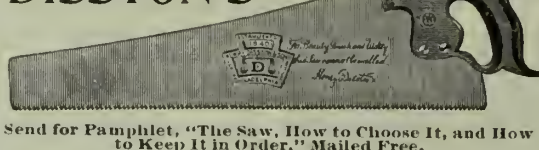
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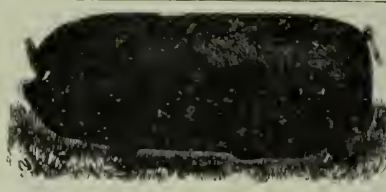
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IT WILL PAY YOU to buy a saw with Disston's name on it. It will hold the set longer and do more work without filing than other saws, thereby saving in labor and cost of files. They are made of the best crucible cast steel and fully warranted.

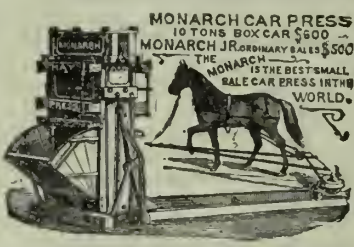
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In the face of the strongest competition ever known at a California State Fair our swine herd again carried off the majority of the premiums. Why? Because we have the best pigs in the State. Choice pigs from prize winners ready to ship at reasonable prices. Write for Catalogue and Prices.

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THE 3-4 BALE JUNIOR MONARCH PRESS.

Made extra heavy to meet the growing demand. Guaranteed to load a car to full capacity in ordinary hay.

MONARCH CAR OR SHIP PRESS, bale 17x20x40. \$600.00
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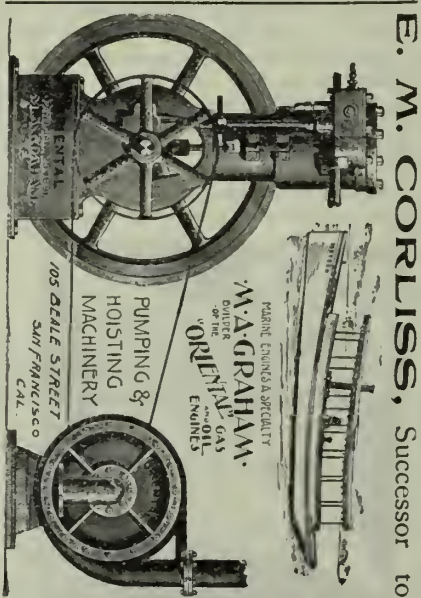


Rushford Farm Wagon Gears.

| No. | Axle. | Tire. | Capacity. |
|-----|----------------------|---------|------------|
| 47 | 2 1/4 Hollow Steel. | 2 inch. | 2,500 lbs. |
| 47 | 2 1/4 " | 3 " | 2,500 " |
| 48 | 2 3/4 " | 3 " | 4,000 " |
| 49 | 2 3/4 " | 3 1/2 " | 5,000 " |
| 49 | 2 3/4 " | 3 1/2 " | 5,000 " |
| 50 | 2 3/4 " | 3 1/2 " | 6,500 " |
| 51 | 3 1/4 " | 3 " | 8,000 " |
| 52 | 3 1/4 " | 3 " | 10,000 " |
| 38 | 1 3/4 Concord Steel. | 3 " | 4,000 " |
| 18 | 3 1/4 Steel Skeln. | 2 " | 4,000 " |
| 19 | 3 1/4 " | 2 1/4 " | 5,000 " |

The above are our GREEN LIST Wagons. As we are overstocked on these sizes we can offer bargain prices without regard to our cost.

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have large feed holes; large wheels; Automatic Door to remove overlap; two feeds to the circle. Less than 9 in. where the team crosses.
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They do not break, as they cannot bind on the pin. Good looking too. Ask for them at your dealer's. Send for circular. Made only by
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BARGAINS IN BICYCLES
NEW AND SECOND-HAND
FROM \$20 UP
Send for List. **Hooker & Co.**, San Francisco

For Jerry's Sake.

(Continued from page 296.)

big architects there. Mis' Parsons told him everything, and how they wanted the house to be just homey—the kind that a boy would like to bring his mates to; and the Cap'n told him never to mind the cost, and so the planning of it was left to him. He said to Squire Dunham, when he was down here one day, lookin' after the builder a little, that he put more study on that house than anything else he'd ever done.

"They moved the old building off, because Mis' Parsons wanted the new one to stand on the same spot where Jerry was born. It was a long while going up, and they do say that the Cap'n and his wife watched every stick and stone that went into it, outside and in.

"When it was finally done they sent to town again for a house furnisher, and he came down and looked it all over, and advised with them what was best to buy. Mis' Parsons wouldn't have any shams or gingerbread work, but all plain and rich and the real thing!

"There was a college professor and an artist staying at the Point that summer. Mis' Parsons had always been timid and retiring-like, but now she didn't seem a mite shy of anybody. So she went and talked with them, and those two men just set to work for her as if they'd been her brothers. The professor made out a great list of the very best books for the library, besides another shorter one for the Cap'n and Mis' Parsons to read together—improvin' books on all sorts of subjects, and written out so plain that folks without much schoolin' wouldn't have trouble to understand them. And the painter—he told her what pictures to get and how to hang them on the walls so that they'd have the best light. And, more than that, he gave her one of his own for a present, that good judges say is worth a thousand dollars.

"When they had got settled in the new house those two folks went to readin' and studyin' regular, like children; and if there was anything that Mis' Parsons didn't understand she'd go and ask the minister about it and he'd explain it to her.

"When the time came that Jerry, if he'd lived, would 'a' been old enough to go to school, Mis' Parsons took to visitin' the school every week punctual. She'd often take a little present to the teacher—flowers or a basket of fruit or something—and she'd always say:

"I brought this for my son."

"She and the Cap'n made all sorts of good times for the children—Saturday picnics and what not. And every Christmas eve she had a tree for them in the dining-room, all blazing with candles and with presents for every one marked 'A merry Christmas for Jerry's sake.'

"Then, when Jerry would 'a' had to have been sent away from home, she went around making inquiries about the best boarding-school for boys; and after she'd picked out the one that she thought most proper she went with the Cap'n and made acquaintance with the teachers and had the boys introduced to her, aiming to help along any who were poor and deserving. They used to go to all the anniversaries, and be set on the platform with all the distinguished visitors, and Mis' Parsons would smile on the boys speaking their pieces as if every one had been her own. Boys! Why, she had the house swarming with 'em in vacation time! The yard looked like a school playground, what with croquet and tennis and hammocks and swing-poles; and, for the matter of that, there were some better things to be learned of her than they get at any school. She'd changed somehow in her ways—not but that she'd always been lady-like, but there was a difference. She was finer, more understanding. I've heard say that manners were a kind of outside dress; some folks have to pad theirs all over to make 'em smooth, but Mis' Parsons' just fitted her! Just her way of listenin' comforted anybody in trouble.

"Well, the boys that Jerry would 'a'

gone to the academy with got through there and went to college, and Mis' Parsons she kept right along with them, looking after them the same as ever. She made up her mind what society he'd been likely to join and then what did she do but get the Cap'n to build a house for it—a 'fraternity house' I believe they call it. The young fellows all knew her for 'Jerry's mother,' and the wildest of them would have knocked down anybody that dared to make game of the little white-haired woman that went to see them every commencement; and they do say that her pleadin' turned back more than one of them that had got a start on the road to ruin.

"The house was full as ever in vacation. Some of the fellows that had sisters brought them along. The Cap'n had bought the pleasure boat—as neat a craft as you'll see along shore—and he used to take the young folks down the bay, with Mis' Parsons along to do the mothering. It was a pretty sight to see them hangin' around her, and she so fond and proud of them all!

"But there was one of the girls—speak of angels—if there she ain't a-comin' now! Just look at her sharp, and I'll go on with the story after she gets by."

A young woman simply dressed in a gown of some light fabric approached us, driving leisurely in a pony carriage. Her face, shaded by a broad hat, wore an expression of great purity and gentleness. She might have been thirty years old. She bowed pleasantly in response to the driver's respectful salutation, and when she was again out of hearing he resumed:

"That is Miss Edith Hale. As I was goin' to say, she came to the Parsons' with her brother the same summer that Jerry's class graduated. She and Mis' Parsons and the Cap'n took to each other amazingly from the first. Perhaps 'twas because she had lost her own father and mother before she could remember; and her brother was the only near relation she had in the world. She was invited for a fortnight, but Mis' Parsons begged so for her to stay that she kept on and on, till the summer was most gone. Then Mis' Parsons told her that if Jerry had lived, it was she, and nobody else, that he would have chosen for his wife. And then she pleaded with her to live with her and the Cap'n as their own daughter.

"I never heard tell just what Miss Edith said to that, or how it struck her to have been pre-empted, as you might say, by a three-weeks-old baby! But the end of it was she did stay, and she's there now—the light of the house, and of the whole neighborhood, too. It stands to reason that such a young woman as she is wouldn't have been without offers, but, if she'd had them, she'd just said 'No' on the quiet, and that'd been the last of the matter. And there's one thing certain—an own child

couldn't take better care of Jerry's mother. For Mis' Parsons and the Cap'n are gettin' to be old folks. They'll be passing over the river before many years, and I've sometimes thought that, unless a body was uncommon busy down here, it would a'most pay to go along, if so be one could be sure of seeing them meet Jerry!"

An Afflicted Mother.

From the Times, Paw Paw, Ill.

A resident of this town who has lost two children during the past six years by violent deaths has been utterly prostrated by the shock, and seriously sick as a result of it. One child (aged 9) was killed by a cyclone in '90 while at school; another, three years later was run over by a Burlington R. R. train. That griefs and misfortunes may so prey on the mind as to lead to serious physical disorders has been well demonstrated in this case. As a result of them, her health was shattered and she has been a constant sufferer since 1890. Her principal trouble has been neuralgia of the stomach, which was very painful, and exhibited all the symptoms of ordinary neuralgia, nervousness and indigestion. Physicians did her no good whatever. She was discouraged and abandoned all hope of getting well. Finally, however, a certain well known pill was recommended (Dr. Williams' Pink Pills for Pale People.)

She supplied herself with a quantity of them, and had not taken them two weeks when she noticed a marked improvement in



A Constant Sufferer.

her condition. She continued taking the pills until seven or eight boxes had been consumed and she considered herself entirely cured. She can now eat all kinds of food, which is something she has not been able to do for years. She is not troubled in the least with nervousness as she was during the time of her stomach troubles.

She is now well, and all because of Dr. Williams' Pink Pills for Pale People a complete cure has been made.

If any one would like to hear more of the details of her suffering and relief gained by the use of Dr. Williams' Pink Pills for Pale People, they may be obtained, probably, by writing the lady direct. She is one of our well known residents, Mrs. Ellen A. Oderkirk, Paw Paw, Ill.

"ZENOLEUM"

STOP THAT LEAK

The shepherd's profit often leaks away through the invisible channel of Lice, Ticks, Itch, Scab, and other insect or parasite pests without his knowing what is wrong.

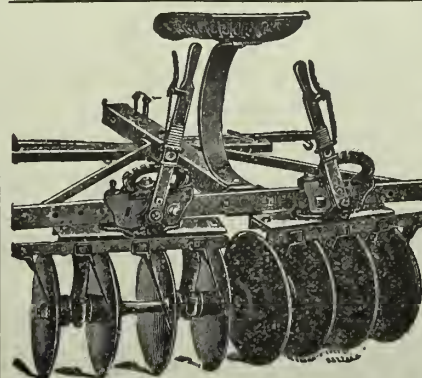
THE REMEDY—that which will stop the leak and turn the tide toward profit is

ZENOLEUM...

the Non-Poisonous Cure for all these ills and others. Can be used hot or cold. Does not stain the fleece. It is cheap—1 gallon makes 100 gallons. We want reliable agents everywhere. Write for circulars, prices, directions and terms.

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CASTLE BROS., Agents, San Francisco, Cal.



Pacific Reversible Disc Harrow.

4-foot, 5-foot and 6-foot sizes in 16 or 20-inch discs. We guarantee that this Harrow can be more quickly reversed than any machine in the market.

Our prices are a revelation. An extension can be furnished admitting of a space of between 5 and 6 feet between gangs. A center-cut device can be furnished, if desired.

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Trees and Vines become hardier, and their products better colored and better flavored when liberally treated with fertilizers containing at least 10% actual

Potash.

FREE An illustrated book which tells what Potash is, and how it should be used, is sent free to all applicants. Send your address.

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MEYER, WILSON & CO., San Francisco, Cal.
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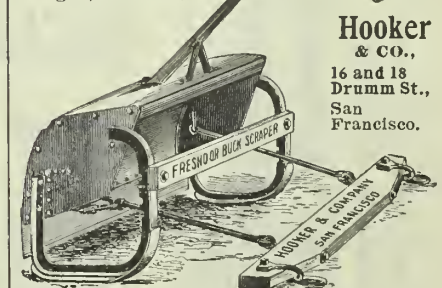
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IMPROVED FRESNO SCRAPER.

5-Foot.
Weight, 300 Lbs.



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For Planting Season of 1898

We offer for sale a choice lot of

Budded Orange and Lemon Trees,

One and two-year buds of the leading varieties, on sour or sweet stock.

Prices to Suit the Times.

SEEDLING ORANGE TREES at your own price. Correspondence solicited.

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ROSES!

10 Ever-Blooming, Field-Grown Roses for \$1.

Eight thousand Roses, field-grown, two-year-old plants, have to be closed out. These consist of the best ever-blooming varieties, and will be sold at 10 plants for One Dollar, sent by express or delivered in the city of San Francisco. These Roses are in first-class condition and are bound to give satisfaction. No order filled for less than One Dollar. I name a few varieties, as space does not permit of the naming of the whole list: Aurora, Archduchess Marie Immaculata, Bon Sella, Bougere, Beauty of Stapleford, Cath. Mermel, Cheshunt Hybrid, La France, Celine Forrester, Cameons, Capt. Christy, C. Riza du Parc, Cecil Brunner, Duchesse de Brabant, Duchesse of Albany, Dr. Pasteur, Etoile de Lyon, Eliza Sauvage, Francisca Kruger, Gen. Dubois, Furstin Bismark, Gen. de Tartar, Jean Ducler, La Marque, Mad. Cochet, Desire, Falcot, Hoste, Lambert, Schwaller, M. v. Houtte, Malmaison, Sunset, Queen, Papa Goutier, Rainbow, and a good many other varieties. F. LUDEMANN, Pacific Nursery Baker and Lombard Sts., San Francisco, Cal.

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J. F. H., Cambridge, Mass.—A sprain such as you describe is not incurable. Use *Tuttle's Elixir*.

Horseman, Elgin, Ill.—There is only one sure way to locate a lameness. Apply *Tuttle's Elixir*, and it will remain moist on the part affected.

Mrs. F. S. T., Richmond, Va.—If you find a case of colic that *Tuttle's Elixir* will not cure, it will entitle you to the \$100 reward offered by Dr. Tuttle.

Wilbur S. Davis, M.D., Alton, N. H., writes: "To whom it may concern:—This certifies that my horse, on the twentieth day of January, 1892, ran away from a hitching post and injured her knees so badly that she was pronounced worthless by several horse doctors. I tried various remedies for six weeks and she grew worse. I at length used *Tuttle's Elixir*, and in three weeks from the time I commenced to use it I had her on the road ready for work. The knees healed so nicely that it is difficult to find the scars."

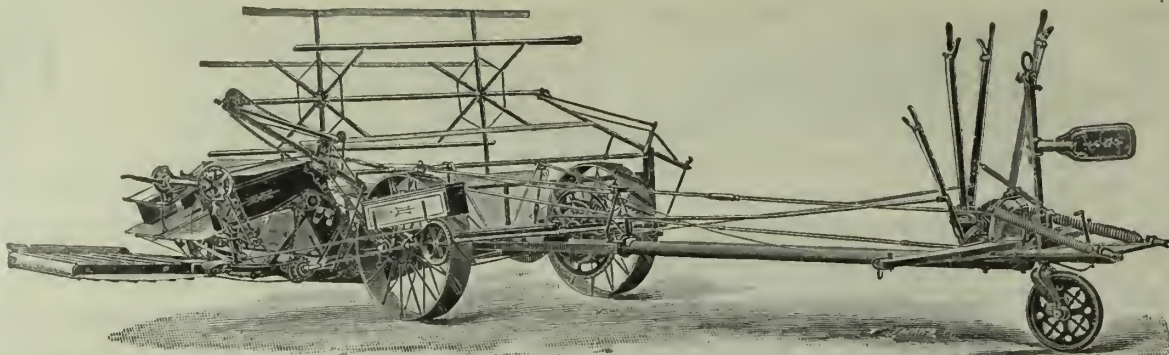


Tuttle's Elixir

will do all that we claim for it, or we will refund your money. It will cure all forms of lameness, colic, sprains, cockle joints, etc.

Send to us for full particulars, MAILED FREE. **Tuttle's Family Elixir** cures Rheumatism, Sprains, Bruises, Pains, etc. Samples of either Elixir free for three 2-cent stamps for postage. Fifty cents buys either Elixir of any drug-gist, or it will be sent direct on receipt of price. **DR. S. A. TUTTLE, 27 Beverly Street, Boston, Mass.**

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and
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Wheels.

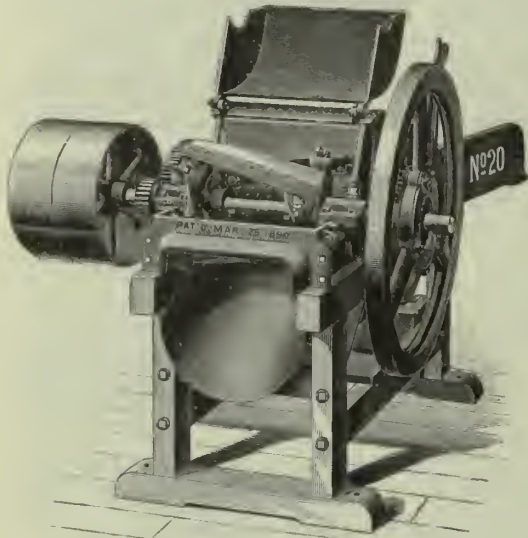


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BAR.
Steel Ledger
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HARVESTER-KING BINDERS. 10-foot or 12-foot Cut; Capacity 60 bundles per minute.

DID YOU EVER BEFORE HEAR OF A PERFECT BINDER CUTTING A 12-FOOT SWATH?

We guarantee it to cut and bind, to bind all it will cut, just as perfectly as any 7-foot machine ever constructed, and the draft will be no greater. Forty acres a day is its capacity. It elevates the grain only 22 inches above the platform. Platform is 42 inches wide. Wheels are 44 inches high and with 12-inch tires. It is double geared. This will revolutionize harvesting. A header spout can be furnished when desired, thus making two complete machines and each far superior to any similar machines ever built. **SEND FOR CIRCULARS.**



OHIO ENSILAGE CUTTERS (Power).

SEND FOR OUR NEW
Vehicle Catalogue No. 23
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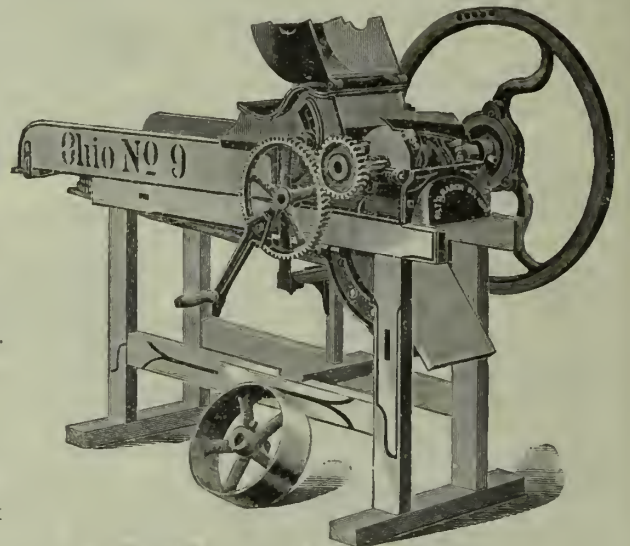
Feed Cutters.

We have the most complete stock on the coast.
Send for special Catalogue.

Now is the time to buy Feed Cutters.

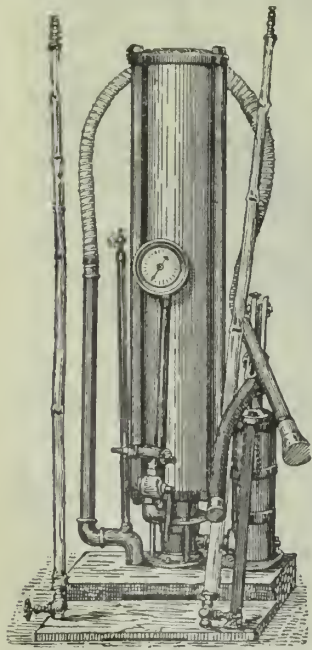
Crops are short and feed is high.

Be economical; cut your fodder, prevent stock
wasting their feed and save money.



OHIO FEED CUTTERS (Hand or Power).

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THE Bean Spray Pump.

OLD RELIABLE.

YET NEW,

As They are ALWAYS UP TO DATE.

Every part of the pump (including the receptacle) that comes in contact with the washes used, is coated with a compound that is not soluble in any of the spray material. This, with our non-corrosive valves, plunger packing and pumping cylinder, makes a pump that will last as long as the man will who buys it.

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the GEM with
Graphite
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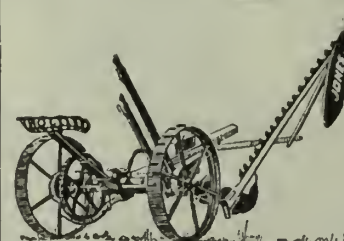
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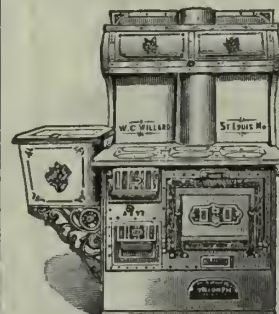
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 20.

SAN FRANCISCO, SATURDAY, MAY 14, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

Evaporating Beet Juice.

At our last glance at the operation of the beet sugar factory the juice had passed through the carbonation and the first filtering, but it is still too far from pure. From the filter it goes to another treatment with lime and carbonic acid, and after that to the "sulphitor," where it takes a cleansing with sulphurous acid gas, which is pumped through it, making it still purer, and it is then, after another filtering, ready for its first evaporation.

The upper picture shows the quadruple effect evaporator, consisting of four bodies, each of which is arranged with a steel chamber and tubes, with room for the vapors to disengage. The upper part, or vapor chamber, of each body is connected with the steam chamber of the next body, so the vapors from the boiling liquor may pass into the steam chamber of the next. The liquor space of each body is filled with juice, and the exhaust steam from the different pumps and engines

throughout the house is collected in a pipe which supplies the steam chamber of the first effect with steam, which causes it to boil. The boiling juice and the vapor rising from it have a temperature of about

100 C., which passes over to the steam chamber of the next body and causes it to boil. The steam arising from it has a temperature of about 88 degrees, which passes over to the steam chamber of

the third body, causing it to boil. The temperature of the steam arising and passing over to the fourth body has a temperature of 76 degrees, which causes it to boil. The difference in temperatures at which the liquid boils in each body is caused by the difference in pressure, which is maintained by means of a condenser and vacuum pump. The vapor arising from the last effect or body passes to a condenser, producing a vacuum which favors boiling at a temperature of 60 C.

The fourth acts as a condenser and produces a vacuum for the third, the third for the second, and the second for the first.

The juice, flowing through the four effects, becomes more condensed as it passes along, and, coming out as "thick liquor," is again submitted to the fumes of sulphurous acid and passed through mechanical filters, shown in the lower engraving, that remove any solid foreign matters, after which it is boiled in the vacuum strike pan, where the sugar is crystallized.

This step, at which sugar first appears, and for which all the treatments we have described are preparatory, will be seen at our next visit to the factory.



QUADRUPLE EFFECT EVAPORATORS, WHERE THE CLARIFIED JUICE IS REDUCED TO A SEMI-SYRUP PREPARATORY TO BEING RE-CLARIFIED AND BOILED INTO SUGAR.



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E. J. WICKSON..... Horticultural Editor.

San Francisco, May 14, 1898.

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The Week.

It is gratifying to see how much more cheerful are the advices from many points in the interior than could have been anticipated from the adverse conditions of the early spring. The cool weather, the veiled sun and the heavy mornings are placing all possible advantage on the side of the plant in its struggle with drouth, and the fields, except in the most arid situations, are doing much better than expected. The shipment of early fruits eastward is proceeding now by carloads, and that marks the beginning of the summer's activity. There will be more fruit, on the whole, than has been counted on, but not too much to sell well.

Speaking of selling, the local wheat market shows responsiveness to the great bull movements at the East, which have sent the Chicago price to a figure very seldom attained. Abroad, also, there is much strength in wheat. Spot wheat in San Francisco is quotable \$1 per ton higher than a week ago. Values are not too high considering the conditions of crops and public affairs; only it is too bad that California will have only a fraction of her usual crop to sell. The provisioning of the warships and troopships to carry food and reinforcements to our troops in the Philippine islands is having quite a stimulating effect on some lines of produce in San Francisco. Meats, dairy products, onions, beans and potatoes will all go forward in considerable quantities. The provisioning of the Alaskan regions may also become quite an affair later. If the treasure receipts are large, it will stimulate a fall rush to be provided for, as well as the spring crowd. Altogether, there promises to be a busy summer on this coast. There are few notable changes in produce values this week, and such as there are will be found faithfully noted on a later page.

The triumphant progress of the war with Spain fires the California heart and precludes the possibility of dry-year forebodings. Even if our people were not as busy as they are, this fullness in the heart would go far to compensate for emptiness in the pocket, which some must undergo. The sweeping victory of our ships at the Philippines and the demoralized condition of the Spaniards at home are to be hailed with the greater joy from the fact that they portend the speedy end of war and the attainment of peace which will demonstrate to the world the triumph of fair play and humanity.

Will There Be Too Much Fruit?

WHEREAS, It appears by indisputable evidence produced at this and many preceding conventions of California Fruit Growers, that it is impossible to profitably dispose of the enormous and rapidly increasing quantities and of nearly all varieties of fruits that are now grown in this State; and,

Whereas, More than ample evidence of the truth of the above statement may be had by reference to the very able and exhaustive essays delivered at this and previous Fruit Growers' Conventions regarding the deplorable condition of market values of both citrus and deciduous fruits, not excluding the olive and the grape; and,

Whereas, It is officially stated that but little more than 50 per cent of the citrus, deciduous and olive trees already planted are at present in bearing, a fact which promises in a very few years to at least double our present output, thereby threatening to make business still further unprofitable to California fruit growers; therefore, be it

Resolved, That in the sense of this Convention that we sound the note of warning to discourage the further planting of the above-named fruit trees and vines until such time as some method can be devised whereby the crops already being produced annually can be marketed with reasonable profit to the fruit growers of California.—Adopted at the Riverside Convention of Fruit Growers, April, 1898.

We doubt not that the influence of these declarations will be good in several important respects. It will discourage the unwise, speculative planting which has gone to such lengths during the last decade. It will repress the boom spirit and relieve California of a host of organizers and promoters in fruit lines who are as wanting in horticultural knowledge as they are in moral sense. It will be a contribution to sound and healthy progress in California if a considerable number of these parties should now devote their attention to the industrial reorganization of Cuba and the Philippines. Evidently their castles in Spain would better befit a country more recently Spanish than California. Our progress must rest upon a sounder foundation of knowledge and conscience. With building on this foundation we shall secure an accession of a more contented and prosperous people. The deception and swindling which have been practiced during the last decade under the guise of enterprising and profitable fruit planting is giving California a bad name at the East and abroad. Hundreds have been deluded with the idea of securing a competence from a ridiculously small acreage, and hundreds more have not only been led into this misconception, but the paltry acreage that has been sold them at exorbitant prices has often been intrinsically bad land—much of it almost too arid and sterile for any crop, and much more of it wholly unsuited for fruit growing. The opportunity for such operators was found in the glamour proceeding from results secured from exceptionally well placed and conducted fruit plantings. The declarations of the southern fruit conventions must be taken as evidence that margins have become narrow even with the best growers on the best lands, and this should warn all who have ears to hear that inflated anticipations and wildcat undertakings should be carefully avoided.

But though we accord these resolutions this good effect we do not accept them as sufficient evidence that fruit plantings in California should cease. In fact we feel perfectly assured that wise planting should proceed. We do not take the enumeration of the trees now planted as a true exponent of future production. There will be a very marked shrinkage when the conditions which we plainly see environing many of the plantings shall have had time to produce their certain effects. Altogether aside from the abandonment of much of the "promoted" acreage of fruit, there will be a large shrinkage of the acreage of honestly and enterprisingly, but mistakenly, planted trees. Orchards have been planted on low valley land which will soon be seen to be vastly more profitable in its large yield of forage crops. Rich, moist land fit to carry dense population of animals, fit to produce butter and cheese, bacon and wool, or to produce large crops of grain, is already yielding a crop of horticultural firewood in its clearing of fruit trees and vines. On the other hand large stretches of upland will return to winter grain or grazing because the soil and moisture supply are not fitted for the strong, deep draft of bearing fruit trees. On a smaller scale, orchards planted at too great distances from shipping points, especially in districts of hopelessly bad roads, are being abandoned or cleared for other crops, and locations beset by frosts will take the same course. These things are not restricted to any particular part: they are occurring at the present moment throughout nearly the whole length of the State. And there is another quite important factor in the present course of affairs to be found in neglect

which results from ignorance of the requirements of first-class orcharding, or from general shiftlessness, or from disappointment when the fact is recognized that good fruit is only to be secured by incessant work and watchfulness. Whenever neglect follows from any of these causes or through the misfortune of absentee ownership, the results are the same: the trees will quickly resent it, withdraw themselves from satisfactory production and find rest at last on the woodpile.

For all these reasons, and others like them, we believe the effective acreage of California fruits will soon be found much less than present estimates and assessors' returns would indicate. For these reasons, also, we decline to receive the resolutions of the convention as sufficient evidence that no more fruit should be planted. We believe that the trite declaration that "there will never be an overproduction of the best fruit" is much nearer the truth. We should not hesitate a moment to plant the best fruit land in the State to the best varieties of the fruits to which it is clearly adapted, but if we had any doubts that we were not getting the right fruit in the right place, we should make such study of the matters involved that a firm conviction would follow. The great trouble, aside from bad lands and bad situations to which we have already alluded, has lain in the fact that fruit planters have ignorantly imitated each other, and, as blind led by the blind, they have fallen into the ditch which the resolutions define quite feelingly.

In a sort of resentment at the impeachment of their standing as wealth producers, some fruits will this year sharply contradict the declarations of the convention as to their unprofitability. We expect that with some fruits there will be pound-prices and acre-values as high as have been known in the State during recent years. Canners are scurrying around after fruit and are free to declare that they expect a good run of extra good fruit and may bring it long distances to their canneries. Of course, this will be largely due to the frost-killing, but this fact will not be made much of: the money will be just as large and heavy to those who get it, and they will strongly endorse the recommendations of the convention—to other people, while they themselves will decide, because of their especially favorable location, to plant a few more fruit trees. And perhaps they will not be far from right, either.

The War and California Products.

California producers have been fighting Spanish products for a good many years and displacing them in American consumption, so that the cessation of trade cannot now make the difference in values that it would have made a decade ago. And yet there will be some supplies cut off this year which may be expected to have a certain elevating effect on California produce. Just as we go to press we receive from the U. S. Department of Agriculture a very timely bulletin entitled "Our Trade With Spain, 1888-1897." It gives very interesting statistics on all the lines of commerce between the two countries. It shows that the average total value of all fruits and nuts imported from Spain for the years 1893-7 was \$1,703,727 per annum. The following are the annual averages of the first half of the decade, as compared with the last half:

| Annual Average. | 1888-92. | 1893-7. |
|-------------------|-------------|-----------|
| Raisins..... | \$1,496,303 | \$445,597 |
| Oranges..... | 95,162 | 33,243 |
| Lemons..... | 55,841 | 73,992 |
| Other fruits..... | 543,057 | 736,022 |
| Almonds..... | 374,311 | 405,863 |
| Other nuts..... | 4,991 | 8,670 |
| Wines..... | 770,052 | 594,555 |

It is thus seen the Spanish products with which we compete are on the down grade, except almonds and lemons, and the amounts are not large enough to occasion much disturbance by their absence. On the whole trade, Uncle Sam will lose, for American exports to Spain have been several times as great as imports therefrom.

Quite an exhaustive address on the present condition of the "free public market" undertaking has been transmitted to the Harbor Commissioners this week by the producers' committee, of which Mr. E. F. Adams is chairman. It reviews the attitude of various interests toward the enterprise and is accompanied by much documentary evidence. It should be published in pamphlet form by the Harbor Commissioners.

QUERIES AND REPLIES.

Lawn Grasses for Heat and Drouth.

TO THE EDITOR:—I am in search of a good lawn grass suitable for this climate that will give a close, even and evergreen lawn without the overabundance of water required by Kentucky blue grass. The lawn is of considerable extent and consists of about 10 to 12 inches of good soil overlaying a fill made of clay, small rocks and hardpan. The hardpan was broken fine when picked from its original position; and although compacted in the fill, is not impenetrable to roots. Part of the lawn has a slope of about 3 inches to the foot. It was planted to Kentucky blue grass about a year ago. A fine, thick stand was obtained; but in spite of continuous and abundant watering, it died out in places and generally refused to keep green or to flourish during the summer. The lawn faces the east and south, and it appeared to me that the intense sun heat burned up the grass. I have been trying various grasses in a very small way preparatory to remaking this lawn toward fall, and had hoped to find something more satisfactory than Kentucky blue grass. Bermuda grass here makes a dense mat, but is brown part of the year. Is there any grass other than Texas blue grass that you think would supply what I want? Is 10 to 12 inches of good soil too shallow for Kentucky blue grass? An experimental section made to try and determine the cause of my grass drying out showed that the roots in most cases did not reach through the top soil.—H., Santa Barbara.

We do not seem to be making much progress in finding any other lawn grass which will make a turf as handsome as Kentucky blue grass. We can gain something in saving water by using Australian rye grass with or without a mixture of white clover, but we lose in beauty. The same is true in using Texas blue grass instead of Kentucky blue grass. Both these plants have a disposition to become coarse; and though they make a verdure which is fair as compared with bare ground, it is poor when contrasted with a well-kept carpet of Kentucky blue. Recently white clover is coming to be freely used in the place of grasses in the bay region, and it does well with much less labor and water than Kentucky blue grass and will be handsomer, with the same water, than Australian rye or Texas blue. How it will stand the heat on your south banks you probably know; with us it does well in such exposure with only moderate watering.

Ten or twelve inches of good soil will do for Kentucky blue grass providing the subsoil is compact enough to retain the moisture. A fill of hardpan, rock and clay may be so porous as to be leachy, and then you could hardly pour on water enough to keep the grass green in hot weather. A tight hardpan would be better for grass than a coarse, leachy substratum if just water enough was used to make the soil moist and not soggy. On such a tight layer you can have good grass with much less water than on a broken layer through which the moisture rapidly passes below the reach of the grass roots.

Electrocuting Weeds.

TO THE EDITOR:—Some time ago you published an account of an experiment two young men were trying near Fresno to kill Johnson grass by spraying it with water charged with electricity. I would like to know if it was a success; if so, it would be a great thing for our morning glory patches. Would it not kill fruit trees if it touches them?—W. H. HANNIBAL, Santa Clara.

It will do for the Fresno Republican to rise and explain the progress of this enterprise which it projected. We have seen nothing about it lately.

Two Common Weeds.

TO THE EDITOR:—I send specimens of two plants the seeds of which were sold me as seeds of Crimson clover. If I have sown weeds I must get them out of my ground.—J. A. STEWART-MACASKEL, Santa Cruz.

The plants are weeds but they are not new to this State: in fact they are found nearly everywhere. They may have come in the clover seed or they may not. One is *gnephalium* and the other closely allied thereto but the specimen is too young to be sure about it. They are not particularly bad weeds, but they should share the proper fate of all weeds, which is to be cut before seeding.

Arundo Donax as Stock Feed.

TO THE EDITOR:—Do you know anything of arundinae, or arundos, as a feed for cattle, etc., of its nature as such, where it can be secured, which species is preferred? I read a glowing account of it as a feed and milk producer from the pen of a pur-

ported Fresno county rancher some time ago.—G. W. COWAN, 623 N. Marengo avenue, Pasadena.

The plant is *Arundo donax*. It was very strongly praised by a Fresno county farmer who, since then, has gotten himself into trouble by writing other people's names. No doubt cattle will eat the young shoots of this cane, but of how much account it is as a stock food we do not know. Probably some RURAL reader can give us his experience, for a vigorous propaganda was undertaken by the man who had the roots for sale and many tried it. If the plant has any value we should like to know it.

Bad Blapstenus.

TO THE EDITOR:—Black beetles, some about a quarter of an inch in length and others a little longer, are destroying tomato and Chile pepper plants just after setting out in the field. In about three days they destroyed several acres of new plants for one grower. What can you tell us about them?—READER, Los Angeles.

It is interesting that simultaneously with the above comes report of injury to grape vines in Fresno county by a black beetle, which stays in the ground during the day time and at night eats the buds of the vine. Prof. C. W. Woodworth of the University has all these marauders in charge, and finds that the smaller beetle from Los Angeles is the same species which is working at Fresno, and that its full name is *Blapstenus pulverentulus*, while the larger insect is *B. auripellis*. The insects belong to the family Tenebrionidae and are not generally considered injurious, but they are found to be clearly destructive when the vineyard or vegetable field are cleanly cultivated and their usual food supply is cut off. Poison is the most practicable recourse to destroy these pests. A dust composed of five parts of flour and one part of Paris green can be shaken upon the plant from a bag of cloth of the right texture to pass the powder slowly, if the insects eat the leaves. Our correspondent does not say how the insects work. If they eat into the stem, as might be expected from the habits they adopt with other plants, powdering the leaves would not be very effective, and poisoning the stem is difficult. In that case it may be feasible to attract them to other poisoned vegetation. Handfuls of green alfalfa can be dipped in water in which Paris green has been stirred at the rate of an ounce to ten gallons. Keep the mixture well stirred and drop the poisoned alfalfa here and there among the plants.

Best Corn for Shredding.

TO THE EDITOR:—Will you please inform me the best corn to plant? My object is to shred it this winter for hay.—GEO. H. FOX, Mokelumne Stock Farm, Clements.

The best varieties of Indian corn for different places and purposes in California have never been fully set forth, and we would like the experience of all RURAL readers on the point. In last week's issue there was an interesting account from San Diego county favoring a small Mexican flint corn on account of its stooling and leafy growth. For ensilage purposes the large white dent kinds yield greatest weight, and presumably for shredding the same criterion would hold. Some favor sweet corn for forage purposes, but its growth is usually less than the field kinds. If we had our querist's case we should plant a large white dent; can any reader give better advice?

Summer Treatment of Strawberries.

TO THE EDITOR:—Our strawberries are now just coming into full ripeness and are a fine crop. Single plants in my bed measure 12 inches in height and 24 inches in diameter, and would if ripened at one time produce three or four quarts of fine berries. The crop is so satisfactory that the inquiry has arisen whether we could not by letting plants ripen off after first crop, cutting off water supply and runners and then, after a period of rest, again irrigate and cultivate and produce a good second crop. Please inform me if such a course is ever pursued and give results of same if so done.—CHAS. H. SLOCUM, Fair Oaks.

You can do it more easily than that. The plants do not need any enforced conditions of rest in the summer time. Do not let them dry out, but just keep fairly moist and well cultivated and keep the runners off and they will continue bearing until winter, and then the plants will help themselves to a rest during the cold weather. Then the plantation can be cleaned up and manured and got ready for another long bearing season. The strawberry only wants a fair chance in California.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 9, 1898.

By W. H. HAMMON, Station Director.

The week has been almost without rain, only a few light showers having been reported along the coast and in the mountain districts of the western portions of the State. The weekly deficiency in all portions of the State equals the normal rainfall. The temperature has been normal or above the normal in the interior, and below the normal along the coast. The difference has been quite marked between the coast and the interior. Fogs and low clouds with fresh west winds have prevailed along the seaboard. The wheat crop is a failure in principal grain sections of the State. A small amount of wheat will be harvested on irrigated land and summer-fallow in foothill sections. Some elsewhere will be cut as hay. Feed is scanty. Haying is in progress in many sections. Both hay and alfalfa are light crops. Cherries are ripening nicely; the yield is good, but the fruit rather smaller than usual. Pears, apples and prunes are doing well and vines are generally reported as thrifty and loaded with grapes. In the fruit orchards irrigation is in full operation; and where trees cannot be reached by irrigation ditches, the orchardists are hauling water.

SHASTA.—Heavy norther latter part of week. Wheat is doing well; fair yield.

GLENN.—Haying under headway; light crop. Farmers cutting only enough for home consumption.

BUTTE.—Olive trees in bloom and very heavy on young as well as old trees.

YOLO.—Warm winds advancing fruit. Apricots coloring. Now haying.

SACRAMENTO.—Most of crops so poor they will be fed without being cut for grain. Haying about over.

SOLANO.—Most hay cut, but only one-fourth average crop. Cool weather helping grain on low land to fill after a fashion. Shipping cherries; crop large. Fruit smaller than usual.

EL DORADO.—All fruits looking well. Little hay or grain.

STANISLAUS.—No crops this season except on lands under irrigation. Fruit doing fairly well.

MERCED.—Grain on summer-fallow land improving very fast. With the continuation of cool weather considerable grain will be harvested. Grape vines looking well.

FRESNO.—Plenty of water in ditches. Fruit doing well. Weather favorable for growing grain; Haying; light crop. Conditions not improved in irrigating district. Sorghum seed being sown for feed. Vineyards coming on slowly.

KINGS.—Some grain on irrigated lands; farmers haying. Some varieties of plums promise fair crop; pear yield heavy; prunes dropping some; vineyards doing finely. Haying in irrigated section.

KERN.—Now cutting first crop of alfalfa; light crop. Grain doing well.

LAKE.—Crops of all kinds look well except late-sown grain. Haying has begun nearly three weeks earlier than usual; yield good. Fruit trees are making a good growth, but the crop will be light except apples, pears and prunes. Vines very thrifty with many grapes.

SONOMA.—Cutting some volunteer hay; very light. Hay and grain growing slowly, but bright and green. Fruit of all kinds doing well. Good crop of apples, pears and prunes.

SAN MATEO.—Water supply so low that roads have not been sprinkled. Strawberry crop heavy, cherries ripening, peaches doing well; no apricots.

SANTA CLARA.—Cherries promise good crop if irrigated. Water is being hauled to trees that cannot be reached by irrigation ditches. Some apricots blown off by heavy wind. Berries ripening fast. Haying. Some crops on low lands look well; on higher land drying fast.

SANTA CRUZ.—Foggy nights and mornings of great benefit to crops.

MONTEREY.—Cool and foggy.

SAN LUIS OBISPO.—Cloudy with strong winds. No crops. Very little feed. Fruit in fair condition. Cattle are still being shipped to pasture.

SANTA BARBARA.—Some hay will be harvested but not more than enough for local consumption. New beet sugar factory will not run this season. Santa Ynez valley farmers will have no grain. Hay crop limited to a few small patches of alfalfa land. Grain lands will get a much needed rest.

VENTURA.—Foggy. Orange shipments short.

LOS ANGELES.—(Bassett)—Some alfalfa being cut; what corn there is planted looks well. (Duarte)—Cool and damp; favorable for fruits and cereals. Oranges moving East. (Los Angeles)—Feed scarce; vegetables and fruits doing well. Shipping sheep East to pasture. (Palmdale)—Drouth still prevailing; very light pasture; alfalfa drying. (Fernando)—Pears and apricots doing well; oranges all shipped.

SAN BERNARDINO.—Fair alfalfa and some barley crop. Whole valley looking brighter.

ORANGE.—No grain and little hay. Feed getting scarce.

RIVERSIDE.—No improvement in situation in hack country. Movement of oranges continues good.

SAN DIEGO.—Showers have been of greatest benefit. Cutting hay in the hay region of the county and outlook good for light crop inland. Some grain will be harvested. Strawberries plentiful and of excellent quality. Thinning apricots; peaches and oranges setting well. The rain will benefit orchards, vineyards and considerable late sown grain; perhaps the honey crop also.

EUREKA SUMMARY.—Grass on prairies drying up. Cherries, prunes and other small fruits very promising, though all crops would be much benefited by rain.

LOS ANGELES SUMMARY.—Cloudy weather beneficial to growing crops. Late rain increased water supply; decreased demand for irrigation water. Light crop of hay being cut in extreme north. Oranges setting well.

The following data for the week ending 5 A. M., Wednesday, May 11, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Last Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | .06 | 31.33 | 49.20 | 44.17 | 40 | 54 |
| Red Bluff..... | .00 | 12.30 | 24.15 | 24.70 | 50 | 80 |
| Sacramento..... | .00 | 8.87 | 17.28 | 20.17 | 48 | 88 |
| San Francisco..... | .00 | 7.75 | 22.60 | 22.78 | 48 | 86 |
| Fresno..... | .00 | 4.03 | 10.52 | 9.49 | 48 | 96 |
| San Luis Obispo..... | .00 | 6.16 | 20.71 | 18.99 | 42 | 72 |
| Los Angeles..... | .00 | 5.37 | 16.80 | 16.99 | 48 | 74 |
| San Diego..... | .00 | 4.46 | 11.68 | 10.30 | 52 | 66 |
| Yuma..... | .00 | 1.66 | 5.35 | 3.02 | 54 | 102 |

* No record.

THE DAIRY.

Dairying in San Diego County.

By JOHN JUDSON of San Pasqual at the University Farmers' Institute, Escondido.

Coming to this State in 1852, and having been engaged in dairying and breeding in Sonoma county for nineteen years previous to coming to this county in the spring of 1875, and having been engaged in the same business for the last twenty-three years with fair success, I hope I may be pardoned if I claim to know something of the history of the success and failures of dairying in this county. I might say here that, with two or three exceptions, dairying from a financial standpoint has proved an entire failure until within the last eight or ten years. Among the many reasons for this, the primary ones are: 1st, the uniform high temperature of our climate during a large portion of our dairying season; 2nd, the lack of native grasses and the short season of the same; 3rd, the lack of cheap fencing material whereby the second difficulty could be overcome; 4th, lack of proper dairy machinery and appliances whereby the products of the dairy could be made economically and in proper condition for marketing.

Southern Dairy Conditions.—The conditions surrounding the dairymen here are different from almost every point of view from what they are in the northern portions of this State and in other dairy regions. For this reason we have had to learn everything by experience, which is always a slow process. But I think, to a great extent, in one way or another, we have overcome the obstacles that have hitherto beset our way, and by profiting by past experiences and properly using the means placed in our hands at the present time, we may look upon dairying as being made one of the prosperous industries in many portions of our county.

Dairying as a Business.—Dairying is necessarily a very confining business, and unless it can be made to pay, very few would be inclined to engage in it. The question then arises, Can it be made both pleasant and profitable? I think it can. The happiness of civilized man is promoted to such an extent by the products of the bovine species, and they have come to be so necessary to our health and well-being, that our associations with them have become very close and pleasant. No rural scene as portrayed by nature, pen or picture, is considered perfect without the presence of the "lowing kine."

To the agricultural dairyman—and I might say to almost every one—what is there that gives greater pleasure than to look upon a well-bred and well-fed herd of dairy cows?

The Question of Breed.—Profit being one of the main factors of enjoyment from our dairy, the question will then naturally arise, What breed and what feed will best bring about this result, taking into consideration the conditions that surround us? I think that I can safely say that the experience of every successful dairyman in this county points to the fact that to overcome the great obstacle of high temperature in the manufacture of dairy products it is absolutely necessary to have a very liberal infusion of Jersey blood in our dairy herds. It is a well-established fact that no other breed of dairy cows produces as hard or firm butter as the Jerseys, for the reason that no other breed of dairy cows has so large a proportion of the stearine qualities (which is the hardening principle in all fats) in the butter fat of their milk. One or two experiments does not prove a fact, but I have investigated this subject so thoroughly by comparing notes with other dairymen and breeders that I am fully convinced that it is impossible to make butter dairying a success in this county unless there is a large per cent of Jersey blood in the dairy herds, and unless the dairyman goes to the expense of running a refrigerator or using a large amount of ice.

Jersey Butter for Shipping.—I could cite a great many instances in this county to prove the superior shipping qualities of the Jersey butter over that of any other breed, but will give but one or two. On the Santa Margarita rancho, owned by Mr. Richard O'Neil, and lying on the coast between Oceanside and the southern boundary of Orange county, for the last six years (until recently) a creamery has been run, with a separator and all the modern dairy appliances, using the milk from about 200 first-class Durham cows. The weather is usually cool, besides the dairy has an ice-room where, Mr. O'Neil tells me, the butter is kept until shipped to San Diego in the express car, and which occupies about two hours in making the run, and still it is often difficult, during hot weather, to get it to the retail dealer in proper condition to be handled. My creamery is in San Pasqual, one of the interior valleys about twenty miles from the coast and thirty-six miles from San Diego. My regular shipping days are Mondays, Wednesdays and Fridays. I never start the butter from the creamery until 8 A. M. I drive seven miles to intercept the fast freight stage from Escondido to San Diego, on which I ship. It arrives in San Diego at 4 P. M., making a run of thirty-six miles in eight hours, often through a broiling sun; and yet,

with the exception of two cases in the last five years, has arrived in San Diego in first-class condition.

How a Convert Was Made.—Mr. M. F. Heller, my consignee, who is by far the largest dealer in butter and groceries in San Diego, has often called me into his butter room, where he had a box of Santa Margarita butter, one from Santa Ysabel and one from my creamery, to show me the difference in the firmness and handling qualities of the different brands. My brand would always be firm, while the other brands would often be quite soft. The Santa Ysabel ranch and dairy lies near the foot of the Vulcan mountain, about forty miles from the coast, at an altitude of 2500 feet, when the nights are always cool. It is by far the largest private dairy in the county, milking about 300 cows of high-grade Durham mixed with Ayrshire. The dairy is conducted in first-class shape. Mr. Rotanzi, the manager of the Santa Ysabel rancho and dairy, hearing of the fact that the San Pasqual butter made the trip to San Diego in good shape in hot weather, came down with others to investigate the cause. He informed me that he started his butter wagon from his dairy during hot weather at 2 A. M., when it would arrive at Foster station at 6 A. M., to be shipped on express car, and arrive in San Diego a little after 8 A. M., and would often be in such condition that it was not fit to handle. After a thorough investigation he came to the conclusion that the difference in the consistency of the butter was all owing to the different breed of cows. And to show his faith in his conclusions, he immediately bought three Jersey bulls of me as a starter to change the breed of his herd.

I state these facts as a pointer for the benefit of those contemplating going into the dairy business in this county. My fancy breed of cattle in the past, and until the last twelve years, was the Durham, and next to that the Holsteins. I accepted the Jersey at first under protest and only from a financial standpoint. I often think how nearly I agreed with a friend of mine, who, some twenty years ago, while at an agricultural fair at Los Angeles, was asked by an enthusiastic Jersey man what he thought of the little Jersey beauties. After looking them over carefully, he remarked that for a man who was too poor to own a cow and too proud to milk a goat, he thought the Jersey would make a very good go-between.

Feed Growing.—As to the feeding problem, I will leave that to be discussed by those who are better posted, at least from a scientific standpoint, than I am. Suffice it to say that cheap fencing has made it possible for us to grow feedstuffs that make us independent of the natural grasses and which are much more profitable.

One very important point I would impress upon the dairyman is to weed out your poor cows. Keep none but the best and see that they are extra good. It costs no more to feed a cow that will produce 300 pounds of butter a year than one that will make but 150 pounds, and the extra 150 pounds is all profit. Send the poor milkers to the butcher.

Since the advent of the separators, the butter-fat testers and other dairy appliances, there is no reason why dairying should not be made to pay in many localities where hitherto it proved a failure.

Dairy Progress.—It appears to me that in the last fifteen years there has been greater advancement made in dairying than in all time past. This has been accomplished by the wonderful inventions and improvements in dairy machinery, through the researches and experiments of our university experiment stations and by the interchange of ideas and experience through the columns of our various agricultural and dairying publications. I am often astonished at the rapid advancement of agricultural and dairy knowledge, and I often think that what I don't know about dairying would make a very large and valuable book. In conclusion, I would say that, in view of the great competition that exists at present in the various pursuits of life, no agriculturist or dairyman can afford to live without taking one or more good agricultural or dairy publications. We want to adopt Davy Crockett's motto—"Be sure you're right, then go ahead."

THE STOCK YARD.

Present Condition of the Range Interest.

The future value of cattle is of course conditioned upon the future of the range interest. California is, for the most part, out of this interest and looks forward to the chance of profit in producing better cattle by breeding and feeding on the farm and not the range lines. This being the case, our stockmen should be continually informed of the condition of the range interest, and the *RURAL PRESS* always has a weather eye out in that direction. A very interesting sketch of ranging at present, chiefly with reference to Texas but more widely true of other grazing States, we find in a Farmers' Bulletin of the Department of Agriculture by H. L. Bentley, who has charge of the grass station at Abilene. It speaks both of conditions and prospects.

Revival of Speculation in Cattle.—During the past year there has been a revival in the cow business in

all parts of the United States. The low price of cattle that followed as a necessary consequence on the heels of the general wreck of the business in 1894, when millions of cattle were forced on the market to pay debts, discouraged the raising of cattle for a time. This resulted in a shortage that has forced up prices. This rise in prices, due mainly to the fact that the supply has been less than the demand, has induced those still in the business to "stock up" their ranches. Thousands on the outside have also gone into the business. Recently fortunes have been quickly made by stockmen, and this fact, following closely on the heels of the general business depression that has prevailed during the last few years all over the United States, has had a marked tendency toward the revival of the wild passion for speculation that obtained in the early eighties. One would naturally suppose that the old-time cowman, who went "through the fire" in those days, would be very conservative now, but such does not appear to be the case. He seems to feel that as he "played in bad luck" then, now that he has the chance again, he must win back his losses. Hence it is that these men are again in the market as buyers, and now many of them are as reckless in their speculations as they were when everybody was a speculator.

One Instance of Success and Failure.—"A burnt child ought to dread the fire," but when this and that man are known to have cleared large sums in the cattle trade, others with the feverish desire to become suddenly rich have no doubt of their ability to make equally large profits. As an example, there is a Southern cowman who, in 1883, was reputed to be a millionaire. In 1895 he was rated at not above \$50,000; later he came to be recognized as practically insolvent. During the past ten years he has been "hard pressed," until recently. Since the first of January, 1897, he has been in the market again, purchasing "everything in sight," and paying, or agreeing to pay, top prices for all classes of cattle. Things "have come his way," and again he is a rich man. He could retire now and have enough property in hand to satisfy the desires of most men. But he aspires to be once more a millionaire, and will doubtless risk everything he has or shall have, over and over again, to gain his point. Such instances are not rare in the Southwest, and the tendency has been and will be to encourage other and less experienced men to take like risks. This situation means, and will continue to mean for a while, a still further overstocking of the ranges in order that the ranchmen may be able, for the time being, to make the most out of their holdings. The new men who are rushing into the cattle and sheep business know nothing practically of their danger and hence cannot be expected to be conservative. They expect to make fortunes in a short time, like the older and more experienced stockmen have, and may be safely depended on to abuse their ranges just as their predecessors did.

Lack of Interest in Range Improvement.—Another serious difficulty in the way of a renewal of the ranges is the fact that not one stockman in ten has any scientific knowledge of grasses. He knows all about cows or sheep, but has never realized the necessity of studying the native grasses and their habits, and does not seem to care to know anything more about them than he now knows. At a meeting of stockmen recently held those present were questioned about the native grasses growing on their respective ranges. One of the best informed undertook to describe the habitat and the characteristics of certain varieties that were especially mentioned. In ten minutes he had been frequently interrupted, in a pleasant way, by the others, his statements questioned, and his conclusions laughed at. Others undertook to explain, but they, too, failed to impress the meeting with the opinion that they understood the subject under consideration. At last one stockman offered a resolution which was adopted without a dissenting voice and with a shout. It was in words as follows:

Resolved, That none of us know, or care to know, anything about grasses, native or otherwise, outside of the fact that for the present there are lots of them, the best on record, and we are after getting the most out of them while they last.

The adoption of this resolution was followed by a good-natured discussion of the subject, during which those present demonstrated that they really did not know much about varieties, but became interested and were willing to do all in their power to assist in the preparation of a complete list of grasses and forage plants of the region. Later, when as the result of less than one day's effort, nearly fifty distinct varieties of native grasses were found on one ranch, embracing less than five miles square, these men were prompt to admit their ignorance of the natural resources of the ranges. They will perhaps now take more interest in and better care of the grasses of their several holdings; but the rule as to others is likely to be, in the future as it has been in the past, to take things as they come and trust to the ranges to take care of themselves.

Present Condition of the Ranges.—This overstocking of the ranges has continued year after year, through good seasons and bad ones, until it is the opinion of some of the most experienced cowmen of central Texas that the injury has gone almost past the point where redemption is possible. The ranges have been

almost ruined, and if not renewed will soon be past all hope of permanent improvement.

Not only have the ranges been overstocked, but the prairie dog and the jackrabbit have also been damaging the land until the best natural grass country in the United States has been almost destroyed. It is not yet too late to remedy the evil, but no time is to be lost. It is the common opinion that rest is all that is necessary to recuperate and bring back the former luxuriant vegetation of the ranges. But in part common opinion is here at fault. Resting the range will greatly help it, but something more must be done to bring it back to its original capacity for supporting stock, if, indeed, that is now possible. The people of Texas are not different from those of other States. They are all alike grass destroyers. Not only has the stockman been reckless in this direction, but even the farmer has been his ally. The latter still wages a war of extermination on the grasses he finds growing in and about his fields; and in his anxiety to make more room for cotton he ruthlessly breaks the sod, that if properly cared for could be made to pay him much better than cotton at 4 to 5 cents a pound.

TRACK AND FARM.

An Outlook for American Horse Breeding.

Mr. M. W. Dunham of Wayne, Ill., has been well known to the readers of the RURAL PRESS for a score of years as a diligent worker for the improvement of American horses. He was a liberal advertiser in our columns of Pacheron horses, and much of his stock came to this coast. More recently we have heard from him in progressive horse studies, and are not surprised to see that in his recent essay before the convention of horsemen in Chicago he gave a close analysis of our present situation in the horse world.

Early Efforts.—No people have ever been called on to meet such extraordinary conditions, to face so many difficult problems of heredity, as the horse-breeders of America have been forced to do during the last fifty years. For a long time the Thoroughbred was regarded as the only ameliorating agent worthy of consideration. Then the trotter entered the field in hot competition for popular favor, and to add to the complexity of the situation, and the more completely bewilder our breeders, demands for horses of greater weight than either the Thoroughbred or the trotter could supply were precipitated upon us by a new order of things. To supply these wants we were driven by necessity to look to those countries where breeds of greater weight had been developed.

The Draft Breeds.—The native-born Americans sought their supply in France, where they found, evolved and perfected a breed of horses of great weight, docile, active and enduring beyond all other breeds of equal size—horses in every way adapted to the requirements of a people of sanguine temperament like our own. Following these importations came draft horses of every breed. The efforts of all progressive breeders centered solely in the selection of stock of the highest physical qualities and purest lineage; but urgent demand for large horses presented a field too attractive to remain long unoccupied by the speculator. This opportunity for commercial gain was quickly seized by people of all countries possessing established draft horses. A few good animals were brought to our shores by them, but mostly those of the kind that would yield the largest margin of profit with the smallest possible outlay. As our people were not familiar with the qualities of the different breeds the widest opportunity for mistakes and imposition prevailed. In the introduction of the coach horses almost exactly the same conditions obtained.

When we understand the unfortunate circumstances under which our breeders have been placed we are astonished that the results are as good as we find them to be. The fact that they are not worse, and will continue to grow better, we can attribute I think to the American character which quickly rejects everything that does not meet the demands of its necessity. The bitter lesson of the past has been so well learned that the old conditions cannot prevail again. The fittest have survived and to-day, taking counsel of the past, our breeders' demand is only for the best. The greatest promise for the future lies in the fact that we do recognize our weakness from the scientific breeder's standpoint.

The Export Demand.—The demand of the export trade is to-day the handwriting on the wall that must be accepted understandingly by the man who wishes to succeed in the breeding of horses. This trade absorbs nearly every kind and class of horse that is demanded for domestic use and insures remunerative prices to every producer who will put himself in a position to supply the sorts wanted. It is the breeder's index which, intelligently consulted, will prove an unerring guide.

The Carriage Horse.—The typical carriage horse must remain the highest in price, because in no country is there, without governmental supervision,

any well-directed, popular effort made to produce him. England, the country to which we have been taught to look up as breeding the highest class of these horses, has in reality always been the largest importer of them. Before the importation of American horses began in Albion James Irvine Lypton, a prominent British authority on the horse, stated in substance that half the fine carriage horses in London emanated from foreign sources and that continental countries would eventually produce better general utility horses than the United Kingdom. These are the conditions aboard.

In America, with the development of our cities and the accumulation of wealth by our people, the demand for the fine carriage horse became active. No well-directed attempt had been made to breed this horse systematically; but in the great number of all sorts produced enough were for a time found to meet the demand. As soon as the foreigners saw that this kind of horse could be procured in America they began bidding for the offerings, and it was noticeable at once that they paid the largest prices for those animals that most closely approached the model universally accepted for carriage use. The question: "How shall we obtain the best results in breeding horses for this use?" must be answered in this way: We must give them the model they seek, and the only way we can do this is by engrafting on our stock the form characteristics of the best foreign breeds. We must seek the carriage horse of the greatest beauty, greatest substance, greatest endurance, highest type, best action and as much speed as is compatible with the possession of all these desired qualities in large measure. This points to the selection of the French coacher, and particularly of the trotting families of that breed, to intermingle with our own trotting-bred mares, and in this cross I firmly believe we shall find the best and highest-priced carriage horse in the world.

How the French Government has Fostered Horse Breeding.—Under the wise direction of Government officials and aided by enormous grants of money the French breeders have reared on a Thoroughbred foundation a trotting superstructure that compares favorably with our own. These Government grants being available year after year and unaffected by general financial conditions the type of the French carriage horse has been continually improved, and the passage of wise laws has precluded the possibility of retrogression. The race course has been used, not as a mere means of sport or speculation, but to separate the good from the bad, secure the survival of the fittest, to mark those animals which should be chosen to perpetuate the breed. Unsexed animals are not eligible to compete in races endowed by the French Government, and horses or mares standing under 15½ hands high are arbitrarily debarred from winning Government money, as being undersized and unworthy, no matter how great their speed. Again, take for instance the conditions of the great Futurity trotting race of France, the Prix des Conseils-Generals. These conditions provide that any horses entered in this race must be sold to the Government at the close of his three-year-old career at a stated liberal price—\$4,000. Those animals that prove themselves worthy of places in the Government studs are then bought and retired in the full possession of all their constitutional vigor and before excessive campaigning on the race course has sapped their vitality. Such of these as are not bought by the Government are so heavily handicapped in their older form as to render them unsatisfactory as racing tools. This sifting process makes way perpetually for younger generations and makes the utilization of the track as a means to the improvement of the breed alone.

The Results.—This has been going on for years and years. What are the results? A breed of magnificent horses of great size, beauty of conformation, high action and phenomenal speed, considering the nature of the tracks on which they are raced. They must trot on the turf or on loose, sandy soil—the billiard-table track, as we see it in America, being unknown in France. This going has given these horses the high folding action so much admired in the carriage horse, and the selection of only the best individuals as breeders has evolved and developed and is still improving the beautiful type which we seek so much and see so seldom; the type which has in this country been produced not by design, but by accident; the type which when obtained fills with money the pocket of the breeder the world over.

The French trotting racing, so liberally endowed by the Government, is established on a sure and firm basis. The get of the leading French sire of trotters, Fuchsia, have during the past few years won more money in actual races than the get of any American stallion have in this country, and on the grass tracks of France the French stallion Kepi has established a mile record which the best of our American horses have not been able to equal on French soil. These are results of which the French people may well be proud, as in their achievement they have placed ready to our hands the material with which we may, by intermingling it with our own, proceed to the production of the finest carriage horses ever known—horses that will dominate the markets of the world.

THE FIELD.

The Sorghums Again.

We propose to keep up the agitation about planting Kafir corn and other sorghums as long as there is any land that can be wetted down or that is naturally moist upon which these drouth-resisting forage and grain plants can be grown.

We have just received from the Oklahoma Experiment Station an outline of their comparative observations upon the growth of Indian corn and the sorghums, which emphasizes all that we have claimed heretofore of the superiority of the sorghums where moisture is scant and heat abundant.

Kafir, Milo Maize, Jerusalem Corn, Sweet Sorghum. Few crops are of greater importance for much of Oklahoma than are the different kinds of sorghum grown for forage. Kafir corn, Milo maize, Jerusalem corn are all classed as non-sweet sorghums. Some varieties of sweet sorghum are also largely grown for hay or "fodder." Each year the acreage of these crops increases in Oklahoma, especially on upland and places where corn is not considered a sure crop. In Kansas, in 1897, it is reported there were 742,594 acres in these crops, Kafir standing first with 371,838, and sorghum next with 352,528 acres; Milo maize and Jerusalem corn together having 18,228 acres.

There are many varieties of sweet sorghum, differing much in size of stalk, form of head, as well as in percentage of sugar. Three varieties were tested at the Station, but the proper name of no one of these is certainly known. Kafir corn is broadly divided into the red and white varieties. The black hulled Kafir is a form of the white, as is the "black rice corn," judged by the seed purchased by this Station. Milo maize, Jerusalem corn and Dourra, while resembling Kafir corn in many respects, differ from it and from each other in the form of head and some features of the stalks.

Kafir the Best.—The experience at this Station confirms the judgment of many farmers that Kafir corn is to be preferred where the yield of grain is the chief consideration—its stalks and leaves also being palatable and nutritious. The larger yield of well-selected sweet sorghum varieties is good reason for preferring these where the stalks and leaves are thought most important. There seems little reason for recommending either Milo maize, Jerusalem or the Dourras, in preference to Kafir or sweet sorghum.

Planting Kafir at Different Thicknesses.—On three of the plats a good press drill was used. This was set so it would sow one bushel per acre of wheat. In one plat the drill rows were 6, in one 12 and in one 18 inches apart. On thirty plats the seed was drilled in rows—ten 30, ten 36 and ten 44 inches between the rows. On thirty plats the seed was planted in hills. The distance between the stalks in the drilled plats and the number of stalks in the hills varied.

The largest yields of seed were from plats where the seed had been drilled in rows. The largest yield from one plat was at the rate of 53.3 bu. per acre. On this plat the stalks were 3 inches apart in rows 3 feet apart. The average yield of the plats drilled in rows 30 inches apart was 29.1 bu.; from plats with rows 36 inches apart, 34.5 bu., and from plats with rows 44 inches apart, 26.9 bu. The average yield from plats with hills where the rows were 30 inches apart was 26.9 bu.; where the rows were 36 inches apart, 36 bu., and where they were 44 inches apart, 25.4 bu.

In general, the largest yields of stover—the stalks and leaves after the seed had been removed—were from the plats with the greatest number of stalks. Four plats gave more than 11,000 pounds each of well-dried stover, and ten others gave well over 9000 pounds each. Where the planting was in hills, even if more plants grew than would be desirable with corn designed for grain chiefly, the yields of both seed and stover were relatively small.

Kafir and Sorghum as "Fodder Crops."—Ten plats were seeded with sorghum and different varieties of Kafir, using a press drill. The sorghum was of an unnamed variety, the seed being obtained of a neighboring farmer who knew it only as sorghum or "cane." The drill rows were 6 inches apart and the drill set to sow approximately from one-half to one bushel per acre for different plats. Three plats of sorghum gave an average yield of 13,447 lbs. per acre of well-dried fodder, two plats giving over seven tons per acre each. Three plats of red Kafir gave an average yield of 7980 lbs. per acre, the largest yield being 9220 lbs. Three plats of black-hulled white Kafir gave an average yield of 8758 lbs., the largest yield being 9475 lbs. One plat sown with a mixture of sorghum and Kafir gave 11,833 lbs.

Drilled in rows 3 feet apart one plat of red Kafir gave 4600 lbs., and one of black-hulled white Kafir 6450 lbs., showing a marked superiority for the close-drilled.

In the experiment as to thickness of planting or drilling Kafir, forty-nine plats, drilled at varying rates, gave total average yield of 9319 lbs., of which

1657 lbs. were of grain, while eleven plats check-rowed with hills from 30 to 44 inches apart gave average yield of 6064 lbs., of which 1255 lbs. were grain.

Comparison with Indian Corn.—The results of the experiments with Kafir corn and Indian corn are very suggestive. They indicate the relative uncertainty of corn on upland prairie land in a season in which there is drouth or hot winds at a critical time in the growth of the crop. Where not ten bushels of good corn per acre were produced, a considerable number of plats of Kafir in the same field produced from forty to fifty-three bushels per acre.

On the other hand, the value of good creek bottom land for corn was well shown. An average yield at the rate of fifty-six bushels per acre is very creditable.

Rate of Growth of Corn and Kafir.—A large number of measurements were made during the season, as was done in 1896, to ascertain the rate of growth of corn and Kafir. Ten stalks on each of a number of plats were measured daily and the averages taken.

Corn planted March 27 grew at the rate of 1.35 inch per day from May 24 to June 7, when the plants were from 2 to 4 feet high. From June 7 to June 22 it grew at rate of 3 inches per day, reaching height of 7 feet. For five days the average growth was 3.77 inches; on one day, 4.25 inches; individual stalks growing 4.5 inches. Later planted corn did not grow so rapidly nor reach so great a height.

Kafir corn grew much less rapidly than Indian corn. At best period of growth, in June, individual stalks grew 3.5 inches in one day, but there were few days in which the average growth of ten stalks was more than 2 inches. Kafir planted April 17 made an average daily growth of something over 1 inch per day from June 15 to July 1.

Kafir corn will continue to grow with so small an amount of moisture in the soil that Indian corn makes no perceptible growth. Late planted Kafir grew 10 inches higher than did the early planted, although the daily growth was less.

FRUIT MARKETING.

Cured Fruit Marketing.

SECOND PAPER.

By F. M. RIGHTER of Campbell, Santa Clara County, at Sacramento Fruit Growers' Convention and San Jose Farmers' Club.

Only the method of buying and selling that has been jointly devised and approved by both the buyers and sellers can hope to have the hearty support of both. The exchange method through which eastern dairy-men dispose of their products is the only one that has thus been brought into existence. Hence, any other must expect to fail to the extent it deviates from this one. It is an old method, not only born of urgent, continuous necessity, but it has been nurtured to its present maturity by the combined wisdom and experience of those mutually interested. It is the result of the most advanced thought on that important subject, hence, its adoption is vitally essential to the success of fruit growing on this coast.

Advantages of the Method.—Some of its mutual advantages to buyers and sellers may be briefly stated, as follows:

1. It is the cheapest. That this assertion is true a comparison of the cost of selling by the two methods (our present method, and the exchange method) will leave no doubt. By the exchange method the Elgin producers of butter and cheese sold their products in 1892 to the aggregate amount of \$8,315,286.22, (about the value of last year's California cured fruit output, including raisins), at a cost of \$372. Should the value of California's cured fruit output of 1897 equal the Elgin producers' of 1892, and it does not promise more, the cost to the California producers will not be less than 5 per cent of \$8,315,286.22, or \$415,764.33. The difference in the cost of selling by the two methods is, therefore \$415,392.31, or, in other words, the California producers will pay more than 1,117 times as much as the Elgin producers did for the same service.

2. It is the simplest. How it could be made more simple it does not appear.

3. It is the most convenient. Sellers can offer their products for sale on the exchange, either by telephone, telegraph or letter as their convenience may dictate, and through the same means the buyers may purchase them. If not convenient nor desired, neither party need be present nor represented on the exchange at the time of sale. Buyers doing business in any part of this country, or any other having telegraphic connection with this can make their purchases without leaving their places of business, and at a cost of but little more than the telegram or the time employed in writing and delivering it.

4. It is acceptable to both buyers and sellers, as it is the result of their joint efforts.

5. Its dealings are based on justice and equity.

6. The disputes resulting from exchange sales are settled by arbitration, that being the simplest and least expensive.

7. Its arbitrators, consisting of a "committee of

arbitration" and "committee of appeals," are jointly selected by those most interested.

8. The awards of these committees are final and binding on both parties.

9. The cost of arbitration is borne by the loser.

10. It will establish definite grades and define with exactness the commercial terms relating thereto, viz., "fancy," "choice," "standard," "prime," etc.

11. It will increase the quality of goods sold, and hence the price. At least such was the experience of the Elgin Board of Trade. The producers' goods increased in quality, quantity and price. That exchange sold more in 1893 than in 1892, and at higher prices, notwithstanding the increased financial depression.

12. Its buyers and sellers each buy an equal portion of the cost of the sales. This is just and equitable since the buyer's purchases equal the seller's sales, therefore the exchange performs a service of the same value for each, hence each should bear an equal portion of the cost of that service.

13. Its sales are not private nor secret.

14. It sells for spot cash. There are no charges for cartage, storage, shrinkage, insurance, brokerage or 1 per cent off for cash.

15. The sellers' obligations end when they ship their products.

16. Its sales occur as often as necessity requires.

17. It sells but never consigns.

18. It gathers and disseminates information relating to foreign and domestic competing crops, as well as the conditions and wants of the various markets, the financial condition of the consumers, i. e., the buying power of the country, etc.

19. At the least possible cost it brings the buyers and sellers into the closest possible touch which is a condition indispensable to both.

[The report then gives a detailed description of the method by which the offering of each seller is put upon the blackboard—the kind of fruit, the grade, the price which he asks or the fact that he is ready to receive bids, etc., and continues as follows:]

If he does not accept the bid his product remains on the board to be sold at a subsequent sale or withdrawn, as he may choose. When the time for closing the sales arrives, the product of each seller who accepts the price bid is checked off and declared sold to the buyer whose name is opposite that of the seller. The blackboard will then show the names of all the sellers, the quantity and quality of the goods offered for sale, the highest price bid, the prices accepted, and those that were declined, if any, and the names of the highest bidders, as the names of the lower bidders are erased as higher bids are made. The secretary then makes a permanent record of the sale, which is an exact copy of the blackboard's contents at the close of the sale. The secretary also conducts the sales.

Costs of Membership.—The Elgin Board of Trade, a producers' exchange located at Elgin, Ill., to which reference has been made, has but two salaried officers, namely, the secretary and the sergeant-at-arms. The latter is paid \$25 a year and the former \$250, or was when last heard from. The principal portion of the secretary's salary is obtained from a large number of newspapers, from each of which he receives \$1 a week for the report of the Exchange's weekly sales.

We recommend the establishment of an exchange on the lines of the Elgin producers', which admits to membership, not only buyers and sellers, but any others having the requisite qualifications, legal age and good credit, regardless of their occupations. The annual dues of its members are \$2. From this insignificant pittance all of its expenses are paid, including rent, salaries, taxes, light, insurance, fuel, etc. Notwithstanding it costs next to nothing to conduct this exchange its annual sales have for years ranged from about \$6,000,000 to about \$9,000,000, being, as has been stated, fully equal to the annual receipts for the entire cured fruit product of this State, including raisins.

If the cured fruit producers would generally become members of an exchange and sell their products through it, the annual dues necessary to meet all expenses need not, in our judgement, be more than \$5. This is two and one-half times as much as the Elgin producers pay for selling their products, though only the brokerage paid for selling \$100 worth of our product by the method now in use. Hence, any producer would be the gainer by becoming a member of the exchange and selling through it, if he had more than \$100 worth of fruit to sell. To sell the output of the Santa Clara valley for 1897 will cost the producers at least \$100,000 more than it need to. This enormous loss would not be so bad if it were only an addition to the buyer's gain, but instead it is but little more than a subtraction from the producer's income. It is well-nigh an absolute, needless loss. It is the inevitable result of the present method of selling. The exchange method would in a great measure prevent it, and thus increase the producer's income without decreasing the legitimate profit of the buyers. As the prices of your produce decline so also must the cost of producing and selling. If the price received is less than the cost of production and selling, the more you produce the

poorer you will become and ultimately will have to quit the business. If you make and maintain the price of your product at the cost of production plus a reasonable profit on the capital and labor invested, the trade will handle it at that price until they have supplied the consumptive demand. If the demand is not sufficient to absorb all of the supply, you must either produce less or extend the market. If you will do neither, you must suffer the result of your folly. You are not only producers but are also manufacturers, and, like other manufacturers should, as you increase the supply, correspondingly increase the demand.

Transactions Between Individuals.—No exchange, as far as we know, directly assumes any responsibility in the matter of making sales, as the buyers and sellers deal personally with each other. The seller, of course, guarantees the goods delivered to be of the quality sold. He might be required to leave in the hands of the Exchange a portion of the purchase price, until his goods had been inspected and the quantity and quality thus determined.

As the sales are made by authorization of both the interested parties, they ought therefore, to be satisfactory. They are made at the highest prices paid, consequently no one could obtain more. If, however, they are not satisfactory, they need not be accepted, as that is a matter wholly for the seller to decide. The exchange method renders it more difficult to bear the market, and it somewhat removes the necessity. Dealers do not so much bear the market because they want to, but because they have to. Each must buy at as low a price as his competitor or he cannot compete with him. In order that each may buy at the lowest possible price, each must bear the price as low as possible. They cannot act wisely and do otherwise. When buying through an exchange each knows what the others are paying, and hence, the necessity of bearing the prices is not so pressing. Prices are steadier and more easily obtained, thus you not only protect yourself but also the trade.

Will It Do in California.—Can the exchange method be employed in selling California's cured fruits? It can, and it is the only method that can unless you employ some other, as you have all there is to sell. If you will use no other method no other will be employed. Wherever introduced it has displaced all other methods. It has long been in successful use in parts of this and other countries, and hence, gives ample evidence of having come to stay. It seems to us to be only a question of your being true to your interests, or denying yourselves the privilege of aiding yourselves.

FLORIST AND GARDENER.

Garden Notes.

Mr. George N. Tyler, a skillful flower grower of Alameda, gives the *Argus* timely notes on garden activities.

Starting Chrysanthemums.—You can from now on put in the cuttings of chrysanthemums. Do not divide the old roots, as they make very poor flowers. Take the tips of the new growth that the old plants have thrown up; and, better still, take two-eye cuttings—that is, cut off just below an eye and just above an eye, leaving the leaf on the top eye. Insert the cutting in sand or sandy soil so that the top eye is even with the surface of the soil, and this eye will form your flower shoot. Never let the cuttings get wilted and give them abundance of water. They will root in about three weeks. After they have rooted plant them in the beds where they are to bloom, and never let them receive a check of any kind. They must be kept growing from the time they are rooted until they mature their flowers. The main thing with mums is to keep the growth soft, for if it gets hard-wooded once you cannot get a large flower. I advise the growing of the early flowering varieties, and do not grow too many varieties. Queen for a white and Major Bonnafon for a yellow are the best of their kind. They are sure bloomers and every plant will make a flower. They both bloom before frosts set in. The late varieties seldom make good flowers, as they are caught by the early frosts, which blast the flowers, and the rains also injure the flowers.

Pansies and Sweet Peas.—As the warm weather comes on pansies will grow smaller flowers. But you can help to keep the flowers large by picking off the wilted ones and never allowing them to seed.

Sweet peas that were sown in September and October are now coming into bloom. Give them a great deal of water and keep the flowers picked off if you want them to continue blooming till frost. Give them a mulch around the roots with stable litter, in which there is a great deal of straw; or better still, mulch with the clippings from the lawn. This is to keep the ground and roots cool and also to prevent them drying out too fast. It is a good plan to spray the foliage once in a while, but only in morning and on a bright sunny day, so the foliage has a chance to dry off before night.

AGRICULTURAL REVIEW.

CALIFORNIA.

Contra Costa.

A RAISE WHICH MAY BE A REDUCTION.—Antioch Ledger, May 7: The owners of the Marsh grant, near Brentwood, have raised the rent of their tenants from one-quarter to one-third of the crop. Fortunately the tenants were allowed to use the stubble in the fields after their crops were harvested to pasture their own stock, but they were not allowed to take any outside stock on pasture, and the owners reserved the right to rent the pasture to sheep men or others. Under the new arrangement the leasers of the land will have full control of the pasture and can take in all the stock to pasture that they please. This year a great portion of the plant will only be good for pasturage, so the renters will get the entire product of the land. It looks as though the owners, in trying to crowd on more rent, had really given the leasers the advantage this year.

Fresno.

RAISINS FOR HORSE FEED.—Republican: Barley is worth \$30 a ton and raisins from \$18 to \$30. It is difficult to sell good raisins for over \$20 a ton. Some time ago I concluded to use raisins as horse feed instead of grain. As an experiment I bought an old horse and fed the animal twelve pounds of raisins a day. The nag was worn out and poor, but in a short time he began to fatten and grow sleek. The food seemed very nourishing and the horse became plump and full of life. I sold the animal back to the original owner for \$30—three times what I gave for him. Twelve pounds of raisins a day is equal to twenty pounds of barley. At the present price of grain this would make the food value of raisins about \$60 per ton, leaving a profit of \$42 a ton over the actual selling price of \$18. The raisins also make good cattle and hog food, but I have not experimented much in that line. Horses seem to relish the raisins and keep in good condition while being worked. Several of my neighbors will follow my example and use raisins for stock feed. This is a good way to get rid of the surplus now in the hands of the farmers.

NOT SO BAD AS 1877.—Republican, May 6: Ed Lane of Lane's Bridge was in Fresno yesterday. He came to this valley in '69 and has driven sheep over the territory now within city limits. He says many people seem to think that this season is the hardest in the history of California, but from his own experience he knows this is not the case. In 1877 the drought was much more severe. There was comparatively no feed in the valley, and sheep dropped from \$3 a head to 25 cents each. There was feed for only six weeks and the stockmen of the valley were nearly all bankrupted.

Kings.

THE NEW CANNERY.—Hanford Sentinel, May 5: The work room of the new cannery of Fontana & Co. is built entirely of wood and is 100x170 feet, with a shingled roof of 200 squares. The roof is built on the truss plan and is a fine piece of work. Contractor Sharples says he will have the buildings done this week. The warehouse end of the big works is brick, 100x150 feet. The roof will be of corrugated iron and contains 150 squares. Manager Cerruti is on the scene of the works every day. Mechanics are busy building tanks for cooking fruit, tables for peeling, syrup tanks, and machinery for filling cans. A boiler of 75 H. P. capacity with a 35 H. P. engine will be located in a power room built on the west side of the operating room. The floor of the canning room is built with an 18-inch slope from either side to the center, where a sewer will be located for convenience in washing the floors and draining off all impurities, thus making it possible to keep the place clean and neat.

DETERMINING BOTTOM WATER.—Out on the big Lucerne vineyard there is a well on every ten acres of land. These wells are not used for stock or irrigation purposes, but simply as water gauges to keep track of the water line in the earth. If the water in the wells is too low at certain seasons, filling the ditches will raise it; if the level comes up too high, shutting down the headgates will lower it. This system of regulating the water supply is bandied with great success.

Lassen.

WHEAT SELLING.—Susanville Advocate, May 5: The surplus wheat of this part of Honey Lake valley has been almost entirely disposed of, and it is probable that all now remaining on hand will be sold during the next week or two. It is gratifying to know that there is an abundance of flour on hand to supply the home demand until the new crop is harvested, and that our wheat growers are realizing good prices for their product.

Merced.

SHIPPING OUT CATTLE.—Modesto Herald, May 5: A Nebraska cattle buyer named Carey purchased 1100 head of cattle from the Mitchell estate and 600 head from the Crocker Estate Co. last week, sending them to Nebraska in two long trains. The Railroad Co. is shipping 1200 head of cattle daily from Merced, for the Crocker Estate Co. To ship 1200 head daily calls for two trains of thirty cars each. The stock is being conveyed to pasture lands in other localities and States.

Orange.

BEETS AT ALAMITOS.—Anaheim Gazette, May 5: H. P. Larsen came up from Alamitos, bringing the intelligence that 1200 acres of beets have acquired a good stand in that section, those on the irrigated land looking very well indeed. Many patches that have not been irrigated also look well. Mr. Larsen says the sugar factory will have a fair season, considering all the circumstances.

CELERY.—The peat lands are looking especially well and prosperous. The celery crop has been harvested and the farmers, having set the land in barley, are about ready to cut a fine crop of hay off the land. The celery beds for next season's crop are now being prepared, and the young plants will be set out in July. Mr. Johnson sold his celery crop of seven or eight acres last year for \$125 per acre in the field. He says that this year the acreage devoted to celery will not be so large as last season, owing to the frost snap sustained some weeks ago, and the war scare, but he is going in for celery on a larger scale than ever, and will have in fifteen acres.

Riverside.

ACTIVITY IN WELLS AND PUMPS.—Perris correspondence Riverside Press, May 7: There are three alfalfa ranches in the valley that have already contracted with Alexander Graham of Elsinore for new wells, or are about to do so. Arzena Reynolds put his 25 H. P. traction engine to work testing the Seibert well, half a mile below town, last week, at the order of the new owners, lately from the East. The well, with a centrifugal pump much too small, threw a stream of 31 miners' inches of water for several hours without lowering the well. This is an enormous stream of water to take out of a 6-inch bore. The pump is placed in a pit 24 feet below the surface of the ground, and the water rises nearly to the pump level. The test is deemed conclusive, showing that the well lies in a water belt that is little short of being artesian in its nature. Half a mile below this well is a 12-foot hole that was dug by H. J. Norris on his ranch some time ago. The water appears to have come from the old San Jacinto river bed, for with a 4 H. P. Chinese pump the water could not be lowered. A stream gushed in from the walls of the well in one place nearly as thick as a man's wrist, while numberless

little streams helped to keep the flow steady. And there are several other instances of like nature in the valley.

NEW PUMP FOR LAKEVIEW.—A mammoth pump, with triplex chambers, has arrived here for the new pumping plant at Lakeview. The machine is said to be the most powerful south of Sacramento. It is loaded on one flat car and will be hauled over to Lakeview this week. It will be used there to force the water from the wells to the reservoir at the top of the hill.

ORANGE SHIPMENTS.—The orange shipments from Riverside last week were 64,302 boxes, or 224 carloads of twenty tons each. The total for the season to date is 1,143,767 boxes. The shipments to May 1 last year had been only 614,890 boxes, so that we have nearly doubled the output of last season to this date.

Sacramento.

SELLING STRAWBERRIES.—Florin Cor. Bee, May 6: The Florin Fruit Growers' Association shipped a carload to Portland, Oregon, yesterday, at passenger rates. Officers of the Association state that they will, from now on, ship in carload lots, about every other day. A new feature in the shipping of berries has been inaugurated this season. A carload is shipped to Portland, Oregon, placed in charge of Charles Stubbs, out of which he fills orders from Tacoma, Seattle and Spokane, Butte, Helena, Great Falls and Anaconda. From here express shipments are made daily to Ogden, Salt Lake and Denver. The Association reports that prices are ruling low.

A BASKET OF BOUNCERS.—George Taylor, of South Florin, brought in a basket of strawberries yesterday that are worthy of mention. Nine of them measured in circumference as follows: 5 1/4, 5 1/2, 5 3/4, 4 3/4, 4 1/2, 4 1/4, 4 1/2 and 4 inches. The size of these berries can be imagined when it is known that it requires sixteen large berries to top a basket, which was amply done by the above nine.

HOW TO GATHER SHORT HAY.—Galt Gazette: The old-timers, who have seen dry years and short hay before, tell how they used to fasten a dry cowhide on the back of the cutter bar of the mowing machine, then have an extra man with the machine to rake the hay from the cutter bar onto the hide; and when there was a good bunch collected, rake it off. The plan has been tried with good success. In place of the hide use a wooden platform made of strips 4 1/2 feet long by 1 inch thick and 1 1/4 inches wide. These are placed about half an inch apart and fastened to two cross bars on the under side. Others tell of using a sheet-iron platform. Any of them will probably do well. They should be fully as wide as the cutter bar is long and reach back at least 4 1/2 feet. The piles of hay can be left in rows and thus do away with raking the whole ground, which means clean hay free from dirt.

San Benito.

CREAMERY TO RUN ON.—Hollister Advance, May 6: The creamery directors announce that the creamery will not shut this year, as anticipated, at least until fall. Five tons of milk are now being received daily, and the prospects are good for a continuance of the supply.

San Bernardino.

BEET PROSPECTS.—Chino Champion, May 6: There have been 4200 acres of sugar beets planted altogether on the Chino ranch. Of this, 3000 acres are on the lower black land, and on that the beets are doing fairly well. But on the remaining 1200 acres of dryer land planted, nothing is expected. At the present time Mr. Ruop says there are 1020 acres of good stand on the ranch. Of this, 800 acres on the lower land are doing well. The other 220 acres are doubtful of a crop. Planting had been completed last week, but the rain encouraged the planting of 100 to 150 acres more this week, which is now about finished.

STILL FINDING WATER.—San Bernardino Dispatch, April 26: It would naturally be supposed that a claim had been placed upon every stream, spring and drop in San Bernardino county, but there is an occasional new filing that shows there is still water to be had for the searching. The latest was a filing made of record on Monday on 1000 inches from a spring located on the northwest quarter of the southwest quarter of section 33 in township 9 north of range 3 east San Bernardino base and meridian. This water is to be piped from the point of diversion to the station of Newberry, a dozen miles east of Daggett, through an 8-inch iron pipe, and used for railroad purposes at that point.

San Diego.

FAVORABLE CONDITIONS.—Ramona Sentinel, May 5: The rains of last week and Sunday of this week, in all about 1 inch for Santa Maria valley, have greatly helped the growing crops of grain and hay. Since the rain the temperature has been cool and mostly cloudy. The moisture has penetrated to the roots of the plants and with a continuance of favorable weather the general harvest is bled off for a week or ten days, giving time for maturing and increasing the crop in the aggregate at least one-fourth above what it would have been if the rain had not come. Pastures, orchards and gardens will all be greatly benefited. The honey producing plants are advanced, insuring a good honey crop.

San Joaquin.

BEETS FOR CROCKETT.—Stockton Mail, May 5: Many people who have lost their grain through dry weather will avail themselves of the opportunity offered by the Crockett sugar factory and raise sugar beets. K. G. Raaf, manager of the factory, has been among the farmers here recently and offered to make liberal contracts with them. Ralph Lane will probably have 1000 acres contracted for by Saturday. The dry weather has had a bad effect on lands planted to beets, and the Crockett factory must have a considerable quantity to run through the summer.

Santa Barbara.

HAY GOSSIP.—Lompoc Record, May 7: There are not a few farmers in our valley who have a superabundance of hay that they refuse to sell at any price possible to get at present, and who are fearful that they may require it another season. To such we wish to say that hay will in all probability be brought in and sold at the wharf for \$12 per ton. Mr. Buell, agent for the S. P. railroad, was in town last week proposing to deliver Oregon hay of last year's harvesting for \$16 per ton by rail. If it is understood in Oregon, as it surely will be, that southern California will take several hundred thousand tons of hay at fair figures, the hay will be cut, cured and shipped south by the ship load. We may get it for \$10 if our farmers act in concert and charter a 300-ton vessel.

STOCK TO BE PROFITABLE.—Mr. Meade of the Alisal ranch is an authority on stock values, and says the future will find the stock industry a better paying business than at any time during the past twenty-five years.

TEMPERING THE DROUGHT.—The past week has been most favorable for crops and grasses. The temperature has been very low and the atmosphere very humid. A light sprinkling rain fell Sunday and Monday.

Santa Cruz.

OREGON HAY.—Pajaronian, May 5: Watsonville buyers have been looking up Oregon hay and the cost of landing in this valley. They find that it can be laid down here in carload lots at a price less than is asked for Pajaro hay—about \$17 per ton; and that figure will be reduced if the railroad company will extend the "emergency rate" to points south of San Jose. Utah upland hay is being landed in San Jose at

a cost of \$17.50 per ton, and Oregon Timothy hay at \$14 per ton.

VERY EARLY SOWING.—On a part of the Rowe ranch, near the Sandcut, a year ago the Stow Bros. planted barley. It was put in too late for the season and did not come up. It sprouted last fall and grew just right, and has turned out a hay crop which would be a good one in any kind of a year. The forty acres have averaged four tons per acre, and at going prices it is a most valuable crop.

APPLE CROP.—Orchardists agree in saying that at present the apple crop of this valley is something extraordinary. There is every promise of a phenomenal crop. Even the Newtowns are heavily loaded. The "drop period" has yet to be passed. When that time comes, before the close of the month, we are likely to hear that all of the apple crop is going to drop. Last year that claim was very strongly made, but the crop was a big one in the fall.

APRICOTS.—The Pajaro valley apricot crop has come out of the frost scars in good condition. In some sections heavy binning had to be practiced.

Solano.

THE FIRST APRICOTS.—Winters Express, May 6: The first apricots shipped from California this year were sent Wednesday, the 4th day of May, from G. W. Hinchley's Sky High orchard to Sgobel & Day, New York, by the Producers' Fruit Co. This is about two weeks ahead of last year, and has been beaten only once; when a box was shipped the first day of May.

Sonoma.

HAYING.—Santa Rosa Republican, May 5: Hay cutting has commenced in some parts of the county. In late sections it will be three weeks before much hay is ready. Many growers having hay now ready to cut are holding off to await definite action by the weather. Hay buyers are anxiously figuring on prices. Up Healdsburg way some growers are offering loose hay in the field at \$13.50 a ton. That is about as low as yet reported, though prices are not established at this early day. It has been persistently reported that San Francisco and Petaluma buyers are trying to contract baled grain hay for \$16 a ton. Whatever the price, it is bound to be a good one and bay growers will have no cause to complain.

A DANCE IN A WINE TANK.—Healdsburg Tribune, May 5: The Italian-Swiss Agricultural Colony has invited a company on a private excursion to Asti, Sonoma county, May 14th. After a drive through the vineyards the invited guests will join in a social dance inside of a half million gallon wine tank (the largest in the world), participating in the first event of its kind in history.

GOOD CROPS.—Santa Rosa Democrat, May 4: Mr. Daniel Goddard of Russian River says that between Healdsburg and Santa Rosa, along the county road, he has not seen the crops look as well in fifteen years as they do at the present time.

A COUNTY REPORT.—Democrat: George T. Trowbridge of Windsor has visited many sections of the county and made careful inquiries. He says Sonoma county's returns from her products will be \$1,000,000 more than last year for the following reasons: The amount of acreage of wheat and oats is far in excess of last year, the crop about three-fourths as good and the price of hay will be double; prunes are an average crop and prospects of a good price; apples an average crop; pears a good crop; peaches about one-fourth of a crop; hops a good crop; corn looks as well as it ever did at this time of the year and will be a big crop; grapes will be more than average crop, not as large a crop as last year, but an average crop; strawberries, raspberries, etc., a big crop; apricots will be very short; cherries are very light.

Stanislaus.

AN IRRIGATION DISTRICT PROCEEDED AGAINST.—Modesto Herald, May 5: The Modesto and Turlock Defense Association, with the connivance of the board of directors of Modesto district, will in a few days bring suit against this irrigation district to invalidate the organization. The complaint is based upon the lines of the Supreme Court decision in the central irrigation district case, which held that owners of town lots only are not qualified freeholders within the meaning of the Irrigation Act, and that the notice of hearing the petition for organization, by the Board of Supervisors, was insufficient because the names of the petitioners were not published with the notice, though published with the petition immediately above, and a part of the advertisement. Should the proceedings eventually prove effectual, it will be only after protracted litigation, and then the question of the payment of outstanding bonds in the hands of innocent parties must be determined. This is a question the Supreme Court intimated in the central district case to be an open one. The anti claim, of course, that if the organization of the district is invalidated the bonds will necessarily fall also, but it is a fact nevertheless that nothing short of years of litigation will definitely determine the question.

Sutter.

HOPS NEAR NICOLAUS.—Yuba City Farmer, May 6: The hops near Nicolaus are making a vigorous growth and are being trained on the trellis. The Grider Bros., D. R. Redfield and T. J. Mulvany's yards are in good condition. At the Rideout place there is also a good prospect. The price at present ranges from 10c to 15c a pound.

CHERRIES.—The first cherries from this section were shipped to Los Angeles last Saturday from the orchard of S. McClure, near Yuba City. This week daily shipments are being made by G. Bremer, J. B. Wilkie and others.

Tulare.

THE CANNERY.—Visalia Times, May 5: R. I. Bentley of the Sacramento Canning Co. assured a Times reporter that the company are as anxious to operate their cannery here as the people of Visalia are to see it in operation. He says if they can be assured of at least 60 per cent of the peaches that still remain on the trees in this district, together with the other fruit that can be secured, the cannery will open. But the owners of canning fruit are inclined to be shy in contracting their crop. Besides peaches Mr. Bentley thinks a lot of pears, plums and nectarines can be secured, and perhaps a few berries. Such a thing as shipping in apricots from Ventura county to can here is possible.

Yuba.

SATISFACTORY CROPS.—Wheatland Four-Corners, May 7th: From all points within ten miles of town the crops are reported in excellent condition. Mild weather is all that is needed to bring out a large crop of cereals of excellent quality. John Morrison says the grain about Reeds promises 50 per cent more than last year, and he believes the quality will be much better. Out toward Erie the grain is all right, and a few fields favor a crop double that harvested last season. A peculiarity of this season is the fact that the grain on red land is in much better condition than that in the adobe and creek bottoms. The latter appeared the most thrifty early in the season, but with the mild weather of the past two weeks the red land crops have marched right ahead of the others. Hay cutting is general this week on both up and bottom land. From appearances, just as soon as the hay is off, the barley crop will be ready for the header. This crop is now passing from the milk into the dough, and ten days more fine weather without northers will give a full crop of excellent quality.

THE CANNERY.—Marysville Appeal, May 5: R. W. Skinner, manager of the Lincoln cannery, was in town last night. Mr. Skinner reports that his cannery will have a good run and racy pack as much as 250,000 crates of fruit.

THE HOME CIRCLE.

The Heroic Age.

He speaks not well who doth his time deplore,
Naming it new and little and obscure,
Ignoble and unfit for lofty deeds.
All times were modern in the time of them,
And this no more than others. Do thy part
Here in the living city, as did the great
Who made old days immortal. So shall men
Gazing long back to this far-coming hour,
Say: "Then the time when there were truly
men;
Though wars grew less their spirits met the
test
Of new conditions; conquering civic wrong;
Saving the State anew by virtuous lives;
Guarding the country's honor as their own,
And their own as their country's and their
sons';
Defying leagued fraud with single truth;
Not fearing loss, and daring to be pure.
When error through the land raged like a
pest,
They calmed the madness caught from mind
to mind
By wisdom drawn from old, and counsel sane;
And as the martyrs of the ancient world
Gave death for man, so nobly gave they life;
Those the great days and that the heroic
age."

—R. W. Gilder.

A Laugh for Life.

When Priss Fortesque came home from her father's funeral she sat down to think what was to be done next. There were seven of them, and none "at Conway," "in the churchyard," or "at sea," seven all to be clothed and fed and housed, and she was the eldest. Poor Priss, she was the eldest, and her fifteenth birthday would not be till August—nearly eight months! There was no need to count her money, she knew only too well how much (how little), rather, there was.

Mr. Fortesque had been one of those men who are always on the point of doing the very best thing possible, but in the meanwhile they do not do even the second best. He had been on the point of insuring his life ever since he had got married, and the arrival of each of his seven babies had made it more imminent. On the announcement of twins he had gone the length of filling up a number of questions on a paper sent him by the "Caledonian Husbands." He had applied to that justly-reputed assurance company when Mary Euphrosia was born, and they had by return of post sent him an application from, which he meant to read, only the evening paper arrived a moment afterwards with the announcement of his daughter's birth, and the singularly blood-curdling tragedy in the East End, or the Pamirs, or somewhere. But now that Monthermer Julius de Saumerez Fortesque and Cavendish de Vere Bentinck Fortesque had arrived on this planet, he really read the form through and filled in quite a number of the questions. He wrote "Certainly not!" in red ink against the inquiry as to whether his mother or any immediate relation had been addicted to intemperance, and underlined it with blue pencil. He also asserted that not, "so far as he was aware," had he himself even been to China, Sierra Leone, or the Persian Gulf, or resided in those insalubrious spots. He declared his age to be 39 and 268 366ths (it was leap year, and Mr. Fortesque said one could not in these matters be too scrupulously accurate), and the "average ages" of his four grandparents, "all alive," he affirmed to be 340 years; he meant, I fancy, aggregate ages. "To his knowledge," he said, "he had never been afflicted with fits, smallpox, brain fever, necrosis of the knee, or hydrophobia." Being, however, uncertain of its meaning, he wrote "Only very slightly" against the inquiry that related to his ever being afflicted with "Morbid increment of adipose tissue."

But why recall the questions the well meaning gentleman answered, when there remained so many more that he did not answer; and the paper had, after all, never been sent in to the Caledonian Husbands or their agent? Instead of which an omnibus knocked him down in the New Cut, and he died, less than a month afterwards, of erysipelas in the face, leaving Priss with six brothers and sisters to provide for as best she could.

By that time Mrs. Fortesque had got tired of a career which had for some

time chiefly consisted of having babies and trying to make the last infant's clothes do for the new one, and had betaken herself to a more restful existence in the neighborhood of Kensal Green. Mr. Fortesque had also been predeceased by the grandparents of patriarchal longevity with the exception of his maternal grandpa, who survived and lived on public funds in the Hanover Square parish workhouse.

From this ancestor poor Priss could not expect much; in fact, from no human being alive did she expect anything at all.

What could she do?

"So far as she was aware" she possessed no talents and no qualifications. And yet it was eminently necessary that she should at once set about earning a living for herself and six brethren.

Of other girls of her acquaintance she had heard people from time to time declare that they had a wonderful turn for this or that, a singular faculty for such and such a thing. But in her own case no one had ever made any criticism of the kind.

"Stop a bit, though. They always used to say (I remember poor mother often did) that all I was good for was to laugh!"

"Well, laugh and grow fat. That's the saying. And, depend upon it, these common saws are founded on well-proved wisdom." So the wise Mr. Fortesque had been wont to observe; but hitherto Priss had not grown very stout for all her laughing, and certainly there seemed no way of growing fatter by means of it now.

"All the same, I will try," she said to herself, and she determined to try at once. Second thoughts are not always best, not when a bit of pluck and go is wanted. Second thoughts are chilly, discouraging things.

For one thing, the opportunity was good; some good-natured neighbors had asked her brothers and sisters to tea that afternoon, that she might be free to go to the funeral. So they were off her hands.

She took off her black frock and put on its only alternative, a terribly shabby dark green and black tartan. She brushed her jacket—thin enough, poor child, but tidy and respectable; her hat she could not change, for she had but one.

It was a bitter cold day. The wind seemed to come from everywhere and to find grits and straws and dust wherever it went to drive before itself into people's faces. There was no rain, but the sky was black with the threat of snow.

Suddenly Priss saw an old gentleman coming towards her. He was evidently, from the way he "poked," very short-sighted, and he could not distinguish her. The road was almost deserted—on one side the wall of a cemetery, on the other a line of boarding inclosing some gas works. Behind the old gentleman came at a swinging pace a lad whistling "Ta-ra-ra-boom-de-ay." Priss sat down on the ground and without warning burst into unmeasured laughter. Louder than the horrid whistling wind, louder than "Ta-ra-boom-de-ay" rang out her peals of ever increasing merriment. At first it was horribly difficult; but as she went on it grew easier and easier. It became at last almost uncontrollable, and the girl rocked from side to side, bent herself down and straightened herself up, shook her head like a mandarin, and poured forth upon the winter wind volleys, shrieks, rivers, floods of apparently ungovernable laughter.

The old gentleman hurried up, the messenger boy stopped dead in the midst of a bar and rushed to gaze at her.

"Dear heart alive!" cried the old gentleman, peering through his gleam-glasses; "how very singular! How singularly—"

"Very!" suggested the horrid boy who had been whistling "Ta-ra-ra-boom-de-ay."

"Quite so," agreed the old gentleman, adopting the suggestion. "My good little girl, what is the matter with you?"

"She don't seem as if she had much

the matter with her," observed that tiresome boy. "Rayther the opper-site."

"Do try and tell us," pleaded the old gentleman. "Do try and let us know what it is that makes you laugh like that."

But Priss only rocked herself to and fro in the vehemence of her peals of mirth.

"Perhaps," observed the boy, "it's your 'at, guv'nor. It is enough to make a cat larf; or your giglamps, or your guytars."

But the old gentlemen did not like the suggestion, and would not notice it. "Come, come, little girl," he declared; "if you do not stop I shall call that policeman."

"You shut up threatening of her, guv'nor. It ain't agin the by-laws, larfing ain't. And 'that policeman's' a retired lam'post. Garn, y' old silly."

"Well, really," said the gentleman, "its most infectious," and he let off a nervous little laugh or two on his own account.

"S'welp me!" cried the boy.

But by this time the old gentleman was fairly launched, and his cackling merriment made a kind of accompaniment to the continuous volume of the girl's broader laughter.

The boy broke into a step dance, and suddenly melted also into laughter.

"Lord, what a dye we are 'aving!" he tittered forth, holding an imaginary court train over his left arm, and laying his right hand on his heart. Suddenly Priss stopped with as little warning as she had begun.

"Well," she said, "how do you like it?"

The old gentleman dried his streaming eyes. "It's—it's the first time for ten years I've had such a laugh," he giggled.

"Why don't yer take a look at yerself in the looking-glass, then, once a week or so?" suggested the boy.

"If that is so," said Priss, "I think you ought to be grateful to me."

"Well, I really think I am," tittered the old gentleman, setting off on another burst of merriment, in which Priss joined very heartily.

"But, but," sputtered the old gentleman, "what do you do it for?"

"To get my living," replied Priss, still giggling. "I have six children to keep by it."

"You're not married!" shouted the old gentleman. "Do not tell stories, little girl!"

"Garn," cried the boy, "who's a-tellin' of 'em. Who said she was married?"

"I have six children to keep. You can come and see for yourself. But I am not their mother—I am their sister. And I hope you will give me something for making you laugh again."

"Dub up, guv'nor; something 'an-

som, now," cried the irrepressible boy that had whistled "Ta-ra-ra-boom-de-ay."

And the old gentleman did give her something handsome, and he did go and see for himself, which was the beginning of the great good fortune that came to Priss.

* * * * *

"And Priss," asked one of the gentlemen at table, who had been listening to this narrative of Mr. James Wardle's, "what was her good fortune?"

"Her good fortune has been of many shapes. It has been her good fortune to be the foundress of a hospital, and to be the wife of an alderman, who may some day be mayor, to have helped countless lame dogs over innumerable stiles, to be blessed by hundreds of poor children who have felt the benefit of her wise and generous philanthropy, and to have placed her 'own six' children in good positions in life."

"And her name?" inquired another gentleman at table, with a merry twinkle in his eye, as he glanced at Mrs. Wardle, smiling at the head of her hospitable board.

"Her name is, now—well, Mrs. Wardle."

"And the horrid boy who whistled 'Ta-ra-ra-boom-de-ay'?"

"Is now Mr. James Wardle," suggested the first gentleman.

"Garn!" laughed Mr. James Wardle.—Home Notes.

Worry.

We often hear of men who are said to have died of overwork, but it is safe to assume that in nine out of ten of such cases there had been no overwork at all. That too much work has killed some people is not to be doubted, but this does not alter the fact that work pure and simple is one of the rarest of all rare causes of death. The mischief is done by the worry which often goes with the work, and which is mistaken for it.

No one who is not given to worry can conceive of the power which the habit gains over its victim. Such a one will freely admit the excellency of the advice not to worry, but he will add that it is impossible to follow it. This is true only in a measure, and in a few cases. Barring instances of exceptional trouble, of extraordinary "hard luck," almost every one can by resolute determination reduce his worry within living limits.

Awful Error.—"I'll never forget the time I took my good old aunt from the country to see a Shakespearian revival at one of the theaters." "Did she like it?" "Like it? I found that she would never have gone at all but for the impression she had that 'revival' meant something religious."—Cincinnati Inquirer.

Dr. Ayer's

is the name to remember when buying Sarsaparilla. Dr. Ayer's Sarsaparilla has been curing people right along for nearly 50 years. That is why it is acknowledged to be the sovereign Sarsaparilla. It is the original and the standard. The record of the remedy is without a rival,—a record that is written in the blood of thousands, purified by its power.

"I nursed a lady who was suffering from blood poisoning and must have contracted the disease from her; for I had four large sores, or ulcers, break out on my person. I doctored for a long time, both by external application and with various blood medicines; but in spite of all that I could do, the sores would not heal. At last I purchased six bottles of Ayer's Sarsaparilla, thinking I would give it a thorough trial. Before the six bottles had been taken, the ulcers were healed, the skin sound and natural, and my health better than it had been for years. I have been well ever since. I had rather have one bottle of Dr. J. C. Ayer's Sarsaparilla than three of any other kind."—Mrs. A. F. TAYLOR, Englevalle, N. Dak.

Get Ayer's Sarsaparilla.

Elijah Brown.

Elijah Brown, the cobbler, was enamored of the muse, And all his time was given up to stanzas and to shoes. He scorned to live a tuneless life, ingloriously mute, And nightly laid his last aside to labor at his lute; For he had registered an oath that lyrical renown Should trumpet to the universe the worthy name of Brown. And, though his own weak plunions failed to reach the heights of song, His genius hatched a brilliant scheme to help his oath along. And all his little youngsters, as they numerously came, He christened after poets in the pantheon of fame, That their poetic prestige might impress them and inspire A noble emulation to adopt the warbling lyre. And Virgil Brown and Dante Brown and Tasso Brown appeared, And Milton Brown and Byron Brown and Shakespeare Brown were read. Longfellow Brown and Schiller Brown arrived at man's estate, And Wordsworth Brown and Goldsmith Brown filled up the family slate. And he believed his gifted boys, predestined to renown, In time would roll the boulder from the buried name of Brown. But still the epic is unsung, and still that worthy name Is missing from the pedestals upon the hills of fame; For Dante Brown's a peddler in the vegetable line, And Byron Brown is pitching for the Tuscarora nine; Longfellow Brown, the lightweight, is a pugilist of note, And Goldsmith Brown's a deckhand on a Jersey ferry boat. In Wordsworth Brown Manhattan has an estimable cop, An Schiller Brown's an artist in a Brooklyn barber shop; A roving tar is Virgil Brown upon the bounding seas, And Tasso Brown is usually engaged in making cheese; The cobbler's bench is Milton Brown's, and there he pegs away, And Shakespeare Brown makes cocktails in a Cripple Creek cafe.

—Syracuse Courier.

The Parrot and the Hen.

Our next door neighbor owns an amusing parrot, says the Brooklyn Eagle, which is always getting into mischief, but usually gets out again without much trouble to herself. When she has done anything for which she knows she ought to be punished, she holds her head to one side, and, eyeing her mistress, says in a sing-song tone: "Polly is a good girl!" until she sees her mistress smile; then she flaps her wings and cries out: "Hurrah! Polly is a good girl!" She has been allowed to go free in the garden, where she promenades back and forth, sunning herself and warning off all intruders.

One morning a hen strayed out of the chicken yard and was quietly picking up her breakfast, when Poll marched up to her and called out "Shoo!" in her shrill voice. The poor hen retreated to her own quarters, running as fast as she could, followed by Poll, who screamed "Shoo!" at every step.

A few days later Poll extended her morning walk into the chicken yard. Here, with her usual curiosity, she went peering into every corner, till she came to the old hen on her nest. The hen made a dive for Poll's yellow head, but missed it. Poll, thinking discretion the better part of valor, turned to run; the hen, with wings widespread, followed close after.

As she ran, Poll screamed in her shrillest tones: "Oh, Lord! Oh, Lord!"

A member of the family, who had witnessed the performance, thought it time to interfere in Poll's behalf, as the angry hen was gaining on her. He ran out, and, stooping down, held out his hand. Poll lost no time in traveling up to his shoulder. Then, from her high vantage ground, she turned, and, looking down on her foe, screamed: "Hello, there! shoo!"

The frightened hen returned to her nest as rapidly as she had come.

The Microbe War: "We are going to give up having Johnnie get an education." "For what reason?" "Well, we can't get him sterilized every morning in time to go to school."—Puck,

How to Freshen Last Season's Hat.

Many of us have hats left from last season that are just as good as new except they are soiled. We will tell the economical young women how they may be made to look as well as ever, provided she is inclined to make the effort.

In the first place, a white straw hat should be well brushed and the stiffening wire removed, says a writer in *Boyce's Monthly*. Then wash it over with a good suds made of clear water and a white soap; scrub with a nail brush. Then it should be rinsed by dipping it up and down in a clear water. If any stains still remain, a little lemon juice should be rubbed on the spot with the brush.

If more convenient, a diluted solution of oxalic acid may be used instead of the lemon, but the greatest care should be taken to keep it out of the reach of children, as it is a deadly poison.

After the hat has been dried in the open air, it should be sponged over with the white of an egg well beaten up; this will make the straw taut and also complete the cleansing process. A large hat should be dried on a flat surface and sometimes have weights; books are good to press them into shape.

To bleach straw there are several good methods that can be done at home with slight expense and trouble. The hat, after being scrubbed as directed above, should be suspended in a close barrel or box with burning sulphur. Cover the barrel and allow the hat to remain inside from one to two hours.

Another way is to cover the hat over with a paste made of sulphur and sweet milk. It should be dried in the sun and rubbed off with a stiff brush. If the hat is very much stained, lemon juice should be used instead of milk. In the same way, a paste of corn meal and vinegar may be used with great satisfaction.

When the hat is only slightly soiled, and where there is less time to be spent on cleaning, a thorough rubbing with a nail brush and dry corn meal will prove efficacious, and only require a few moments' work.

Fashion Notes.

Many of the summer blouses will be decorated with oblique rows of tucks, meeting in a point over the bust.

A great deal of plaited chiffon tulle and mousseline de soie will again be used on spring and summer hats and bonnets, a decoration most airy and effective in itself, against which all economical people are warned, especially those who intend to pass their vacation months at or near the seashore.

Black and white edgings of lace and ribbon will often be seen on the numerous ruffles that will adorn the summer gown.

Gloves of two colors have been successfully introduced, as also a new gauntlet, with the cuffs lined with black silk. Large buttons are preferred on these gloves.

This year's checks are generally small and not clearly defined.

Foulard will occupy a prominent place among summer fabrics.

Circular-shaped cape collars and pelerines with and without scarf ends, are worn just now in place of the fur beaver cloaks and coats. These are satin-lined and are made variously of heavy repped sicilienne, ladies' cloth, satin brocade, drap d'ete, amure royal, or of material matching the gown.

Ten years ago, when everyone was talking of the Queen's jubilee, a gentleman friend of ours heard the following conversation between two Scotchwomen: "Can ye tell me, wummun, what is it they ca' a jubilee?" "Weel, it's this," said her neighbor. "When folk has been married twenty-five year, that's a silver waddin'; and, when they have been married fifty year, that's a gowden waddin'. But, if the man's deid, then it's a jubilee."—Exchange.

Fun Enough.

If you would enjoy your work, go about it as if it were a game you were set upon winning. According to the *Detroit Free Press*, a certain old farmer learned this secret—which is not a new one—while watching two "city fellows" playing chess. The game was long, and he ventured to interrupt it. "Excuse me," he said, "but the object of both of you is to git them wooden objects from where they are over to where they ain't?"

"That partly expresses it," replied one of the players.

"And you have to be continually on the lookout for surprises and difficulties?"

"Constantly."

"And if you ain't mighty keeful, you're goin' to lose some on 'em?"

"Yes."

"An' then there's that other game that you dress up odd fur, an' play with long sticks an' a little ball."

"You mean golf."

"I think prob'ly that's what I mean. Is that game amusin'?"

"It's quite interesting, and the exercise is very beneficial."

"Well, I reckon it's a mighty good joke on me."

"To what do you refer?"

"The way I've been havin' fun without knowin' anything about it. If you gentlemen reely want to enjoy yourselves, you come over an' git me to let you drive pigs. You git all the walkin' you want, an' the way you have to watch fur surprises, an' figger so's not to lose 'em, would tickle you 'most to death."

Legend of the Opal.

There is an ancient legend that says a woman's living heart was once imprisoned in a milk-white stone, and the throb of its passion and its pain shone through the half-opaque surface, and made it dart a flash, and flutter with flame color, and rose and violet and golden tints. Sometimes it beat high with hope, and the surface was radiant with light; frequently sorrow oppressed it, and its rays were fainter and less glowing. There seems no more beautiful or more fitting association for the lovely opal to have. It almost has life in its center, and no matter how small the stone, if it be of pure origin the colors are as perfect and as varying as in larger specimens.

The Rule.—The Able Editor (ironically): "Is this poetry?" Contributor: "Didn't I begin each line with a capital letter?"—Boston Traveller.

"What's veal, Benny?" "Oh, it's the part of the cow we eat before she goes up."—Sacred Heart Review.

Long capes with hoods are in high favor this spring.

DOMESTIC ECONOMY.

Domestic Hints.

COLD RICE PUDDING WITH APRICOTS.—Wash well two tablespoonfuls of rice, and cook it in a double boiler with one pint of milk and one inch stick of cinnamon. When the milk is absorbed, add one cupful more, stirring occasionally. Take out the cinnamon, add two tablespoonfuls of sugar and one-quarter of a box of gelatine, which has been soaked in one-quarter of a cupful of cold water. Take from the fire, and let stand until lukewarm, stir in lightly one-half of a cupful of thick whipped cream. Wet a mold and put in alternate layers of the prepared rice and apricots, which have soaked over night, and stewed for half an hour. Set away until firm and serve with whipped cream, slightly flavored and sweetened.

GINGER PUDDING.—Cook two ounces of butter and three ounces of flour together for six minutes (taking care the flour does not acquire any color), then stir in by degrees half a pint of hot milk and continue stirring until the mixture is thick and perfectly smooth; sweeten slightly and put aside until cool. Then add four ounces of preserved ginger cut into small pieces, two tablespoonfuls of the syrup (or more if not sufficiently sweet), the yolks of two well-beaten eggs, and lastly, the whites whisked to a stiff froth. Pour at once into a pudding dish lined with pastry and bake in a quick oven for twenty-five to thirty minutes.

JULIENNE SOUP.—Cut into fine, long, matchlike shreds two young carrots and half a young turnip. Add two leaves of celery, an eighth of a new cabbage, one leak and half an onion. Brown these vegetables in a tablespoonful of butter; then turn them into a soup kettle and pour over them one quart of veal stock. Season with one-half a teaspoonful of pepper and half a tablespoonful of salt. Cook the soup for half an hour and then add two tablespoonfuls of cooked green peas and one tablespoonful of cooked string beans. Boil up the liquor again and serve.

CHOCOLATE CORNSTARCH PUDDING.—Scald one and one-half cupfuls of milk. Scrape or grate two squares of chocolate, and melt over hot water; mix with a little of the milk, then stir all together. Dissolve four level tablespoonfuls of cornstarch in enough cold milk or water to blend it, pour into the hot milk, and stir until thick and smooth; cover and cook slowly for ten minutes. Beat together two eggs, three tablespoonfuls of sugar and a pinch of salt; add to the hot pudding, and stir for two minutes; take from the fire, add one teaspoonful of vanilla, and pour into wetted moulds. Serve cold with cream.

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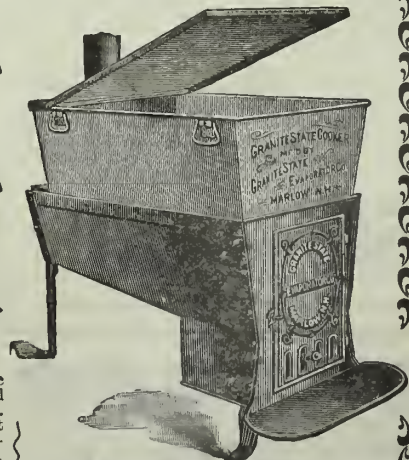
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Yours truly, WM. E. COGGESHALL.

Newport P. O., R. I., June 18th, 1897.

S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, May 11, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | July. | Dec. |
|----------------|---------------------|-----------------|
| Wednesday..... | 95 1/4 @ 98 1/4 | 81 1/4 @ 83 1/4 |
| Thursday..... | 99 @ 1 00 1/2 | 83 1/4 @ 85 |
| Friday..... | 1 02 1/4 @ 1 03 1/2 | 84 1/4 @ 85 1/2 |
| Saturday..... | 1 02 1/4 @ 1 03 1/2 | 84 1/4 @ 85 1/2 |
| Sunday..... | 1 00 1/4 @ 1 01 1/2 | 82 @ 84 1/4 |
| Tuesday..... | 1 25 @ 1 11 | 93 1/4 @ 88 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | July. | Dec. |
|----------------|--------------|-------------|
| Wednesday..... | 9s 5 1/2 d | 6s 11 1/2 d |
| Thursday..... | 9s 9 d | 7s 0 1/2 d |
| Friday..... | 9s 11 1/2 d | 7s 1 1/2 d |
| Saturday..... | 10s 3 1/2 d | 7s 4 d |
| Sunday..... | 10s 11 1/2 d | 7s 4 1/2 d |
| Tuesday..... | 11s 2 1/2 d | 7s 4 1/2 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|---------------|-----------------|---------------------|
| Thursday..... | 1 75 @ 1 73 1/4 | 1 70 @ 1 65 1/4 |
| Friday..... | 1 80 @ 1 78 1/4 | 1 69 1/4 @ 1 74 1/4 |
| Saturday..... | 1 83 @ 1 86 | 1 80 @ 1 77 1/4 |
| Sunday..... | 1 80 @ 1 83 1/4 | 1 77 1/4 @ 1 71 |
| Tuesday..... | 1 71 @ 1 74 1/4 | 1 71 @ 1 74 1/4 |

Wheat.

The wheat market has been strong most of the time since last review, and at this writing (Wednesday noon) spot values are quotably about \$1 per ton higher than a week ago. There has been little opportunity, however, to test values on actual grain in this center, owing to limited offerings. Business here, as well as in Eastern and foreign markets, has been largely speculative, and fluctuations have been among the heaviest on record. May wheat in Chicago jumped up 65c per bushel, touching \$1.85 yesterday, being a little over 8c per lb. To-day May wheat in Chicago closed at \$1.99. July wheat sold as low as \$1.10 and closed at \$1.16 1/2. In Liverpool the advance for the week in May wheat was fully 37 1/2c per cental, and in July wheat an improvement of 42c per cental was scored. In the local market May wheat advanced 13c per cental and Dec. about 10c, but about half the advance in Dec. was lost, this option closing to-day noon at \$1.74 1/2. The wheat reserves throughout the world are reported unusually light, smaller than for many years, and are decreasing at the rate of nearly a million bushels per day. Stocks in all European countries are far below the normal. Most of the continental countries of Europe are in the world's market as buyers, and even Russia is for the time being out of the field as a seller. The position of wheat for the present is certainly a strong one from every standpoint.

Two cargoes of wheat cleared from this port the past week, one for South Africa and the other for London. It is not likely, however, that there will be more than two wheat vessels clear from this center to foreign ports during the balance of this month. There are only two ships here on the engaged list for wheat at this writing, and the disengaged list is of equally slim proportions. It is a rare occurrence to have so little deep-sea tonnage in harbor as at present. The insignificant demand and the recent very low freight rates are in a great measure responsible for the scarcity of ships, as nearly all the vessels arriving lately have been dispatched to northern ports, owing to lack of inquiry for them at this point. The last ship added to the engaged list here for wheat was at 27s 6d net per ton to Cork, U. K., for orders, usual option as to final destination. This is an advance of about 10s over rates nominally current at this port during the greater part of the past month. Wheat ships taking cargoes from Columbia river and Puget sound are obtaining 37s 6d to 38s 9d to European ports. Freight rates from here to Europe during the summer and fall will be governed largely by the figures current at Portland Tacoma, this port ruling 5 to 10 shillings per ton lower in the matter of ocean freights than the points above named. While this State will undoubtedly have the lightest wheat crop on record since 1876, recent advices from Oregon and Washington confirm previous reports that prospects are encouraging for an unusually heavy yield in both of these States. Considerable of this wheat will doubtless be landed here, owing to an encouraging market and to cheaper freights abroad than from northern ports.

| | |
|-------------------------------------|-------------|
| California Milling..... | 1 85 @ 1 90 |
| Cal. No. 1 shipping, alongside..... | 1 75 @ 1 80 |
| Oregon Valley..... | 1 75 @ 1 80 |
| Walla Walla Blue Stem..... | 1 80 @ 1 85 |
| Walla Walla Club..... | 1 70 @ 1 75 |

CALL BOARD PRICES.

On San Francisco Call Board prices for No.

1 white wheat per cental for the week were as follows for the options named:

May, 1898, delivery, \$1.73 1/2 @ 1.86.
 December, 1898, delivery, \$1.65 1/2 @ 1.80.
 Wednesday, at regular noon session of Call Board, May wheat sold at — @ —;
 December, 1898, \$1.71 @ 1.74 1/2.
 Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|-------------------------|-----------------------|
| Liv. quotations..... | 6s 1 1/2 d @ 6s 5 1/2 d | 10s 5 1/2 d @ 10s 6 d |
| Freight rates..... | 17 1/4 @ — s | 27 1/4 @ — s |
| Local market..... | \$1.32 1/2 @ 1.37 1/4 | \$1.77 1/4 @ 1.82 1/4 |

The prices above are for spot lots of standard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

Local millers have again advanced card rates 25c per barrel, and prices for outside brands have also been marked up. Stocks in this center are not heavy, and it is the exception where holders are crowding offerings to sale. Demand lately has been rather light, both for shipment and on local account, otherwise firmer figures would be now prevailing. Flour values cannot be termed stiff, when compared with prices generally demanded for choice to select milling wheat.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | \$4 00 @ 4 15 |
| Superfine, good to choice..... | 4 25 @ 4 50 |
| Country grades, extras..... | 5 50 @ 5 75 |
| Choice and extra choice..... | 5 75 @ 6 00 |
| Fancy brands, jobbing..... | 6 00 @ 6 15 |
| Oregon, Bakers' extra..... | 5 50 @ 5 75 |
| Walla Walla, Bakers' extra..... | 5 50 @ 5 75 |

Barley.

The tendency of the market for this cereal has been to more firmness, but no radical advances have been established in quotable rates. Offerings are mainly from Oregon and Washington, and are not of large volume, but not much is required to satisfy the inquiry at existing rates. The exceedingly limited demand is in a great measure due to the fact that barley is now dearer than oats or corn. Business doing in the spot or sample market is almost wholly in feed descriptions, and in consequence values for brewing grades are little more than nominal, brewers and maltsters giving scarcely any attention to offerings at present. The speculative market did not display much life, and declined immediately following last review, but the decline was more than recovered on Saturday and Monday, Dec. feed closing on latter day at \$1.33, with spot market at same time firm for feed on basis of \$1.35 @ 1.40 for No. 1 to select.

Yesterday and to-day (Wednesday) both spot and speculative markets were quiet and slightly easier.

| | |
|---------------------------------|--------------|
| Feed, No. 1 to choice..... | 1 35 @ — |
| Feed, fair to good..... | 1 32 1/2 @ — |
| Brewing, No. 1 to choice..... | 1 40 @ 1 45 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

May, 1898, delivery, — @ —;
 December, 1898, delivery, \$1.30 @ 1.33 1/2.
 Wednesday at regular noon session of the Call Board May, 1898, feed sold at \$ — @ —;
 Dec., 1898, \$1.30 1/2 hid.

Oats.

There is a little firmer tone to the oat market than was experienced prior to last issue, the improvement being more the result of enhanced ideas of values by holders than of more active inquiry or any great competition among buyers. As oats have been lately offering at easy figures, when compared with prices for barley, it is surprising that they are not receiving more attention. Arrivals do not show a heavy aggregate since last review, but supplies in store and warehouse are more than sufficient for immediate needs.

| | |
|-------------------------------|---------------------|
| White Oats, fancy feed..... | 1 40 @ 1 42 1/4 |
| White, good to choice..... | 1 35 @ 1 37 1/4 |
| White, poor to fair..... | 1 30 @ 1 32 1/4 |
| Gray, common to choice..... | 1 32 1/2 @ 1 40 |
| Milling..... | 1 37 1/2 @ 1 42 1/2 |
| Surprise, good to choice..... | 1 40 @ 1 45 |
| Black Russian..... | — @ — |
| Red..... | — @ — |

Corn.

There have been further free receipts of Eastern corn, much of it going to interior points direct in carload lots, being the cheapest grain now on the market. This imported corn is being landed by the carload at such interior points as San Jose, Sacramento and Stockton at same figures as are current here. Domestic corn is not in large supply, neither is there active inquiry for the same at figures now ruling.

| | |
|----------------------------------|-------------|
| Large White, good to choice..... | 1 15 @ 1 30 |
| Large Yellow..... | 1 10 @ 1 15 |
| Small Yellow..... | 1 25 @ 1 30 |
| Eastern Yellow..... | 1 05 @ 1 10 |
| Egyptian White..... | — @ — |
| Popcorn, shelled, 3 lb..... | — @ — |

Rye.

Market is moderately firm at the prevailing rates, with a fair demand from millers and no large supplies to draw from.

| | |
|--------------------------|---------------------|
| Good to choice, new..... | 1 37 1/4 @ 1 42 1/4 |
|--------------------------|---------------------|

Buckwheat.

There is so little doing in this cereal that that only nominal quotations can be given. For several months past there have been no offerings of consequence.

| | |
|---------------------|-------------|
| Good to choice..... | 1 80 @ 1 85 |
| Silverskin..... | — @ — |

Beans.

A stiff market is noted for all descriptions. Some efforts were made to depress prices by dealers who were out of stock and who were anxious to buy, but they did not succeed in hearing the market. Offerings are not heavy in this center and are mostly held by the smaller dealers. As there is no prospect of any beans being grown in the southern part of the State this season, still higher prices are expected to rule before next year's crop comes upon the market.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 85 @ 2 10 |
| Small White, good to choice..... | 1 90 @ 2 15 |
| Lady Washington..... | 1 90 @ 2 10 |
| Butter, small..... | 1 60 @ 1 75 |
| Butter, large..... | 1 75 @ 1 90 |
| Pinks..... | 2 65 @ 2 75 |
| Bayos, good to choice..... | 2 90 @ 3 10 |
| Reds..... | 2 75 @ 3 00 |
| Red Kidneys..... | 2 90 @ 3 00 |
| Limas, good to choice..... | 3 25 @ 3 40 |
| Black-eye Beans..... | 3 30 @ 3 50 |
| Horse Beans..... | 1 30 @ 1 40 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

Late mail advices from New York furnish the following concerning the Eastern bean market, prices quoted being per bushel of 60 pounds:

Market has undergone a very radical change: in fact, the week's business finds no parallel in the history of a good many years past. Receipts of domestic beans began to shorten up considerably last week, and they have run still lighter again this week, which has borne out the very strong reports from the country. It is said that the great bulk of last year's crop has been moved already, and both farmers and interior dealers, becoming imbued with the idea of war values, have shown no disposition to sell much stock. Quite a number of lots that were sold here were either withdrawn entirely, or such limits placed on them as to practically take them off the market. This has made very moderate offerings, and with buyers following up the advance closely, the rise in prices has been remarkably rapid. Sales of Marrow early in the week were at \$1.40, but the jump to \$1.75 was so swift as to make one's head dizzy; last sales at that figure, but holders now ask more. Medium have advanced to \$1.50, and close strong. Pea sold in round lots this morning at \$1.45, but later in the day business was done at \$1.50, and the feeling is now very firm. The movement in Red Kidney has not been large, but they have shared somewhat in the improvement and close strong at \$2.05 @ 2.10, with some holders asking more. White Kidney and Turtle Soup have gained a little during the week, but neither kind has had much call. Eastern buyers have wanted about all the Yellow Eye that they could get, and sales have been made at \$1.45, would now be difficult to buy the best improved below \$1.50. An advance of 35c has been made in Lima and the market has a firm, healthy look at the close; everything offering at \$2.10 has been picked up. Fair trading in green peas, coupled with decidedly higher Western advices, has strengthened the position here.

Dried Peas.

Values remain quotably about as last noted. There are few domestic now coming forward from any quarter. Millers are running largely on supplies drawn from the East.

| | |
|-----------------------------|-------------|
| Green Peas, California..... | 1 90 @ 2 00 |
| Niles Peas..... | 1 65 @ 1 75 |

Wool.

It looks as though the cloud which has been lately hanging over the wool market was beginning to break and that some old-time activity would be experienced in the near future. There are no transfers to record, and nothing has yet developed to enable the giving of definite ideas of values for spring wools, but there has been considerable looking around on the part of some dealers and manufacturers, and it is probable that this will lead to business in a week or two—maybe in a few days.

| SPRING. | | |
|-----------------------------------|----|------|
| Oregon Eastern, choice..... | 12 | @ 14 |
| Oregon Eastern, fair to good..... | 10 | @ 11 |
| FALL. | | |
| Northern, free..... | 11 | @ 13 |
| Southern Mountain..... | 9 | @ 12 |

Hops.

The same featureless condition of the hop market as last noted still continues to prevail. Both dealers and brewers seem to be amply supplied for the time being. In no other way can the existing dullness be accounted for, as the market is certainly favorable to buyers, purchases of desirable qualities being possible at quite reasonable figures. There are some moldy and otherwise inferior hops on market from Oregon which are wholly neglected and are not quotable.

Good to choice, 1897 crop..... 10 @ 13
 A New York authority reviews the hop market as follows, the report coming through by recent mail:

Business still in a very dull, unsettled condition. Demand does not seem to expand in any direction, and as the season wears away the heaviness of the market becomes more apparent. The only real support is the very moderate supply at all primary points, and the fact that holdings here

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are in strong hands. If stock was forced to sale now it would only add to the depression, and dealers are wisely refraining from that policy. Buyers who show any disposition to operate are securing favors, especially when not too particular about quality. The fact is that there is a very small proportion of choice hops left, and these are worth, say, 10c, possibly a little more for exceptional growths. Fair to prime grades comprise the bulk of the offerings, and these are easily bought in range of 11 @ 15c, while a few common State can be had at 10c, or a little less, and poor moldy Oregon at 7 @ 9c. The little inquiry of late from Europe has not resulted in business, and London cables report a slow market. Not much doing in the country. Cold weather this week has retarded the work in the hop yards, but so far as we have heard the roots have wintered well; scarcely any plowing is reported, and not many new yards are being set out.

Hay and Straw.

As foreshadowed in these columns would likely prove the case, the hay market is unsettled and lower. For several weeks past holders have been trying to hold up the market by main strength, while they unloaded stock previously purchased at stiff figures. Abnormally high values drew supplies from sources outside the State. Free arrivals of imported hay have broken the market. There will be a fair crop of hay in this State, despite the dry weather. Much of the land in the northern and middle counties which had been seeded for grain will be cut for hay. Straw is still scarce and high.

| | |
|--------------------|---------------|
| Wheat..... | 19 00 @ 24 00 |
| Wheat and Oat..... | 19 00 @ 23 00 |
| Oat..... | 17 00 @ 20 00 |
| Barley..... | 16 00 @ 19 00 |
| Timothy..... | 16 00 @ 19 00 |
| Alfalfa..... | 12 00 @ 14 00 |
| Compressed..... | 19 00 @ 24 00 |
| Straw, 3 bale..... | 75 @ 1 10 |

Millstuffs.

Bran market presents an easy tone, offerings being ahead of the demand and are not moving readily at current rates. Middlings also inclined in favor of the buying interest. Values for Roiled Barley ruled steady. Milled Corn sold close to figures of previous week.

| | |
|---------------------|---------------|
| Bran, 3 ton..... | 19 00 @ 20 00 |
| Middlings..... | 22 00 @ 25 00 |
| Barley, Roiled..... | 29 00 @ 29 50 |
| Cornmeal..... | 25 00 @ 25 50 |
| Cracked Corn..... | 26 00 @ 26 50 |

Seeds.

Market is almost bare of Mustard Seed and no stocks of consequence are expected this summer. In the Lompoc district, where most of the Mustard Seed in this State is grown, there will be no crop this season. Flaxseed is in light receipt and market for same has a firm tone. Alfalfa is receiving no attention. Present supplies will have to be carried into next season. In values for bird seed or the general state of the market there are no appreciable changes to record.

| | Per ctt. |
|----------------------------|-------------|
| Mustard, Yellow..... | 3 25 @ 3 50 |
| Mustard, Trieste Seed..... | 3 50 @ 3 75 |
| Mustard, Wild Brown..... | 2 75 @ 3 25 |
| Flax..... | 2 25 @ — |

| | Per lb. |
|--------------------|---------------|
| Canary..... | 2 1/4 @ 2 3/4 |
| Rape..... | 2 1/4 @ 2 3/4 |
| Hemp..... | 2 1/4 @ 2 3/4 |
| Alfalfa, Utah..... | 3 @ 5 |

Bags and Bagging.

Market for Grain Bags is inactive and lacking in firmness, with no prospects of any change for the better being experienced very soon. In fact, it will be phenomenal if weakness does not prove a characteristic feature of the market throughout the season. Wool Sacks are moving slowly at former prices. For other bags quoted herewith values remain in the same groove as previously noted.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, 22x36, spot..... | 5 1/4 @ — |
| State Prison bags, per 100..... | 5 30 @ — |
| Wool sacks, 4 lb..... | 30 @ — |
| Wool sacks, 3 1/2 lb..... | 27 @ — |
| Gunnies..... | 9 @ 10 |
| Bean bags..... | 4 1/4 @ 4 1/2 |
| Fruit sacks, cotton..... | 5 1/4 @ 6 |

Hides, Pelts and Tallow.

A slightly better tone has been reported as existing in the Eastern Hide market, but no quotable improvement has been effected here. Pelt market shows the same easy feeling as recorded in previous issue. Tallow is only in moderate supply and is commanding steady values.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|------------|
| Heavy Steers, over 56 lbs..... | — @ 10 | — @ 9 |
| Medium Steers, 48 to 56 lbs..... | — @ 9 | — @ 8 |
| Light Steers, under 48 lbs..... | — @ 8 1/2 | — @ 7 1/2 |
| Heavy Cow Hides, over 50 lbs..... | — @ 9 | — @ 8 |
| Light Cow Hides, under 50 lbs..... | — @ 8 1/2 | — @ 7 1/2 |
| Wet Salted Kip..... | — @ 9 1/2 | — @ 8 1/2 |
| Wet Salted Veal..... | — @ 10 | — @ 9 |
| Wet Salted Calf..... | — @ 10 | — @ 9 |
| Dry Hides..... | — @ 13 1/2 | — @ 13 1/4 |
| Dry Kip and Veal, 11 to 16 lbs..... | 16 @ 16 1/2 | — @ 12 |
| Dry Calf, under 4 lbs..... | 18 @ 30 | 16 @ 17 |
| Horse Hides, large..... | 2 25 @ 2 75 | — @ 25 |
| Horse Hides, medium..... | 2 00 @ 2 25 | — @ 20 |
| Horse Hides, small..... | 25 @ 25 | — @ 20 |
| Colts' Hides..... | 25 @ 25 | — @ 20 |

Some men won't advertise when they are busy—think it will last forever.
 Some men won't advertise when times are dull—think the crack of doom is just about to the city line.
 There are others who advertise all the time.
 The latter attract inquiries and orders, and in good times can pick what they want.
 In dull times they get all there is going—the other fellow is out of business.
 One is an optimist in prosperity, a pessimist in adversity, and a narrow-gauge weakling all the time.
 The other is just a plain, common-sense business man.

Two Kinds of Men.

WHICH KIND ARE YOU?

| | | |
|----------------------------------|----|----------|
| Pelts, long wool, per skin..... | 90 | @ 15 |
| Pelts, medium, per skin..... | 70 | @ 90 |
| Pelts, short wool, per skin..... | 40 | @ 60 |
| Pelts, shearing, per skin..... | 15 | @ 30 |
| Deer Skins, best summer..... | 25 | @ 30 |
| Deer Skins, good medium..... | — | @ 20 |
| Deer Skins, thin winter..... | — | @ 10 |
| Elk Hides..... | 10 | @ 12 |
| Tallow, good quality..... | 3 | @ 3 1/2 |
| Tallow, No. 2..... | 2 | @ 2 1/2 |
| Goat Skins, perfect..... | 30 | @ 37 1/2 |
| Goat Skins, damaged..... | 10 | @ 20 |
| Kid Skins..... | 5 | @ 10 |

Honey.

The French bark Alice, sailing Sunday for London, carried 135 cases Extracted honey. This will probably be the last shipment to Europe for some time. Stocks of Extracted are now very light. Comb is still in fair supply. Values throughout are being well sustained.

| | | |
|------------------------------|-------|---------|
| Extracted, White Liquid..... | 5 1/2 | @ 6 |
| Extracted, Light Amber..... | 4 1/2 | @ 5 1/2 |
| White Comb, 1-lb frames..... | 8 1/2 | @ 10 |
| Amber Comb..... | 6 1/2 | @ 7 1/2 |

Beeswax.

A shipment of 3700 pounds went forward this week to Europe. Market is now quiet and is not particularly firm.

| | | |
|---------------------------|----|------|
| Fair to choice, 1-lb..... | 23 | @ 25 |
|---------------------------|----|------|

Live Stock and Meats.

Beef market was not very heavily stocked with choice and values for same ruled fairly steady; common qualities were in excessive receipt. Mutton and Lamb went at about the same figures as preceding week. If there was any difference to note, there was a slight tendency in favor of the buying interest. Hog market was fairly firm at the rates ruling on desirable stock for packing, but was weak for soft and stock hogs, the latter being in poor demand at low figures.

| | | |
|---|-------|---------|
| Beef, 1st quality, dressed, net 1-lb..... | 6 | @ 6 1/2 |
| Beef, 2d quality..... | 5 | @ 5 1/2 |
| Beef, 3d quality..... | 4 | @ 5 |
| Mutton—ewes, 7-7 1/2c; wethers..... | 8 | @ 8 |
| Hogs, hard grain fed, medium..... | 3 1/2 | @ 4 |
| Hogs, small..... | 2 1/2 | @ 3 |
| Hogs, large hard..... | 3 1/2 | @ 3 1/2 |
| Hogs, soft..... | 2 1/2 | @ 2 1/2 |
| Hogs, stock..... | 2 | @ 2 |
| Hogs, country dressed..... | 4 1/2 | @ 4 1/2 |
| Veal, small, 1-lb..... | 4 | @ 6 |
| Veal, large, 1-lb..... | 4 | @ 6 |
| Lamb, Yearling, 1-lb..... | 8 | @ 8 1/2 |
| Lamb, Spring, 1-lb..... | 8 | @ 8 1/2 |

Poultry.

Choice young poultry was scarce and in good request, selling at decided advantage. Large sizes received the preference, but small to medium did not lack for custom and brought fairly good figures. Common old poultry continued to drag at low figures. Small and poor old hens were especially difficult to place, there being a glut of these most of the week.

| | | |
|------------------------------------|----|---------|
| Turkeys, dressed, 1-lb..... | — | @ — |
| Turkeys, live hens, 1-lb..... | 11 | @ 12 |
| Turkeys, live gobblers..... | 11 | @ 12 |
| Hens, Cal., 1-lb..... | 3 | @ 3 1/2 |
| Roosters, old..... | 3 | @ 3 1/2 |
| Roosters, young, (full-grown)..... | 7 | @ 7 1/2 |
| Fryers..... | 5 | @ 5 1/2 |
| Broilers, large..... | 4 | @ 4 1/2 |
| Broilers, small..... | 2 | @ 2 1/2 |
| Ducks, young, 1-lb..... | 3 | @ 3 1/2 |
| Ducks, old..... | 3 | @ 3 1/2 |
| Geese, 1-lb..... | 1 | @ 1 1/2 |
| Goslings, 1-lb..... | 1 | @ 1 1/2 |
| Pigeons, Old, 1-lb..... | 1 | @ 1 1/2 |
| Pigeons Young..... | 1 | @ 1 1/2 |

Butter.

Market is firmer for creamery product, quotable rates having been advanced about a cent per pound. For some favorite makes higher figures than below noted are realized. Dairy and mixed store butter continues to bring comparatively good prices, but has not been marked up correspondingly with creamery, as the latter had been relatively too low. Eastern markets are weak. Some Eastern butter is now on the way here.

| | | |
|-------------------------------------|--------|----------|
| Creamery extras, 1-lb..... | 20 | @ 21 |
| Creamery firsts..... | 19 1/2 | @ 20 |
| Creamery seconds..... | 19 | @ 19 1/2 |
| Dairy select..... | 19 | @ 19 1/2 |
| Dairy seconds..... | 18 | @ 19 |
| Dairy, soft and weedy..... | — | @ — |
| Mixed store..... | 16 | @ 17 |
| Creamery in tubs..... | 19 | @ 22 |
| Pickled roll..... | — | @ — |
| Dairy in tubs..... | — | @ — |
| Firkin, Cal., choice to select..... | 19 | @ 21 |
| Firkin, common to fair..... | 17 | @ 19 |

Cheese.

No appreciable changes have been developed in values since last review, but the market presents a healthy tone, with prospects of ruling firmer in the near future. The cheese production of California this season will show a decided falling off as compared with recent years.

| | | |
|-----------------------------------|-------|---------|
| California fancy flat, new..... | 9 1/2 | @ 10 |
| California, good to choice..... | 9 | @ 9 1/2 |
| California, fair to good..... | 8 | @ 9 |
| California Cheddar..... | 10 | @ 11 |
| California, "Young Americas"..... | 10 | @ 11 |

Eggs.

There were expectations that market would rule firmer this week, and some efforts were made to advance values, but conditions were not suitable for the establishing of any material change in prices. Supplies of choice to select continued sufficiently large to enable buyers to satisfy their needs without competing seriously against each other. It is confidently anticipated, however, that best qualities will rule more in sellers' favor at an early date.

| | | |
|---|--------|----------|
| California, select, large white and fresh..... | 13 1/2 | @ — |
| California, select, irregular color & size..... | 12 1/2 | @ 13 |
| California, good to choice store..... | 11 1/2 | @ 12 |
| California, common to fair store..... | — | @ — |
| Oregon, prime..... | — | @ — |
| Held Eastern, as to section and grading..... | 12 1/2 | @ 13 1/2 |
| Local Cold storage eggs..... | — | @ — |

Vegetables.

As to variety of vegetables offering, the list remains about the same as previous week. Summer Squash was received, but little more than in a sample way and not in sufficient quantity to quote. Choice Peas and Rhubarb brought better average figures than previous week. New Onions were in increased receipt and in fair request at tolerably steady figures. Old Onions are almost out of stock.

| | | |
|--|--------|--------|
| Asparagus, No. 1 to choice, 1/2 box..... | 1 50 | @ 2 00 |
| Asparagus, common to fair, 1/2 box..... | 75 | @ 1 25 |
| Beans, String, 1-lb..... | 6 | @ 8 |
| Beans, Lima, 1-lb..... | — | @ — |
| Beans, Refugee, 1-lb..... | — | @ — |
| Beans, Wax, 1-lb..... | — | @ — |
| Cabbage, choice garden, 100..... | 65 | @ 75 |
| Cauliflower, per doz..... | 50 | @ — |
| Corn, Green, 1/2 sack..... | — | @ — |
| Corn, Alameda, 1/2 crate..... | — | @ — |
| Cucumbers, hot house, per doz..... | 40 | @ 1 00 |
| Egg Plant, 1-lb..... | — | @ — |
| Garlic, 1-lb..... | — | @ — |
| Mushrooms, Buttons, 1-lb..... | — | @ — |
| Mushrooms, Wild, 1-lb..... | — | @ — |
| Okra, Dried, 1-lb..... | 12 1/2 | @ 15 |
| Onions, Yellow, good to choice..... | 3 | @ 4 00 |
| Onions, New Red..... | 75 | @ 1 00 |
| Peas, Sweet, Garden, 1-lb..... | 2 1/2 | @ 3 |
| Peas, Sweet, 1-lb..... | 1 00 | @ 1 25 |
| Peppers, Green Chile, 1-lb..... | 12 1/2 | @ 15 |
| Rhubarb, ordinary, 1/2 box..... | 50 | @ 65 |
| Rhubarb, Mammoth, 1/2 bx..... | 75 | @ 85 |
| Squash, Summer, 1-lb..... | — | @ — |
| Tomatoes, 1/2 box or crate..... | 1 25 | @ 1 50 |

Potatoes.

There were liberal receipts of old potatoes for this late date, mostly Burbank Seedlings from Oregon. Market tended in favor of sellers, especially for choice to select, although quotable rates showed no radical advance. Filling of Government orders improved the market. New potatoes are beginning to receive considerable attention, some being of very good quality, and these are favored with a firm market. New Early Rose in boxes are expected in about a fortnight.

| | | |
|---|-------|--------|
| Early Rose, River, 1/2 cental..... | — | @ — |
| Peerless, River..... | — | @ — |
| Reds River..... | — | @ — |
| Garnet Chile, Mission..... | — | @ — |
| Burbanks, Salinas..... | — | @ — |
| Burbanks, River, 1/2 sack..... | 50 | @ 60 |
| Burbanks, Petaluma and Tomales, 1/2 ct..... | 50 | @ 60 |
| Burbanks, Humboldt, 1/2 ct..... | 60 | @ 75 |
| Burbanks, Oregon, 1/2 cental..... | 60 | @ 1 00 |
| Garnet Chile, Oregon..... | — | @ — |
| New Potatoes, 1-lb..... | 1 1/2 | @ 2 |
| Sweet River, 1/2 cental..... | — | @ — |
| Sweet Merced..... | — | @ — |

The Fruit Market.**Fresh Fruits.**

The first Apricots of the season arrived Monday from Yuma, Arizona, and the following day a small consignment arrived from Winters in this State. The fruit was of the Pringle variety, small and not fully ripe. For a 15-lb. box \$1 was asked, and considerably more than this could have been readily realized if the Apricots had been choice in every way. Cherries were not in heavy receipt, and were mostly quite ordinary quality, causing rather low prices to rule. Large and choice Black would have brought an advance on utmost figure warranted as a quotation, and could have been more readily placed at the higher price than were only fair quality at lowest figure below named. Cherries are now going forward to Eastern points in carload lots. Gooseberries were in moderate supply, but mainly too small to attract the most particular buyers. Strawberries were plentiful and market was weak at the low range of values quoted in last review. Blackberries sold in a limited way at 15c per 1-lb. basket. Raspberries and Currants are expected on market in quotable quantity the coming week. Apples from last year are offering out of cold storage at figures much the same as have been current for some weeks past, but the attention given them is not noteworthy, owing to other and more seasonable fruit being now obtainable.

| | | |
|---|------|--------|
| Apples, fancy, 4-tier, 1/2 box..... | 1 35 | @ 1 50 |
| Apples, choice, 4-tier, 1/2 box..... | 1 00 | @ 1 25 |
| Apples, fair to good, 50-lb box..... | 60 | @ 75 |
| Apples, common to fair, 1/2 box..... | 35 | @ 60 |
| Cherries, Black, fair to choice, 1/2 box..... | 75 | @ 1 50 |
| Cherries, White and Red, 1/2 box..... | 40 | @ 65 |
| Blackberries, 1/2 crate..... | 2 00 | @ — |
| Gooseberries, 1/2 drawer..... | 25 | @ 40 |
| Strawberries, Longworth, 1/2 chest..... | 3 00 | @ 4 00 |
| Strawberries, Large, 1/2 chest..... | 2 50 | @ 3 50 |

Dried Fruits.

Values for cured and evaporated fruits are being maintained at virtually the same range as noted in last review. The market for Prunes is showing less activity, but the recent advance in values is being well maintained. An Eastern firm has been operating heavily in this fruit during the past few weeks, and now has control of the bulk of the stocks remaining in the State, present supplies being mostly in the Santa Clara valley. Peaches of prime to select quality are meeting with fair custom at the prevailing quotations, market for such stock being moderately firm, but common or low grade receive little attention. Apples are ruling steady at the improved figures established about a week ago. Apricots are not meeting with much custom at the moment, but desirable qualities are held with confidence, stocks of the same being of rather light volume. Nectarines continue in very limited demand and prices are without improvement. Pears of high grade are not obtainable in large quantity and command full figures. Stocks of good to choice Pitted Plums are light. Outside of Prunes and Peaches, recent business has been mainly of a light jobbing order.

| | | |
|--|-------|---------|
| APRICOTS, ROYAL, IN SACKS, PER LB..... | 6 | @ 7 |
| Apricots, Royal, fancy..... | 7 1/2 | @ 8 1/2 |
| Apricots, Moorpark..... | 8 | @ 10 |
| Apples, in boxes..... | 6 1/2 | @ 7 |
| Figs, fancy pressed..... | 8 | @ 10 |
| Nectarines, White..... | 3 1/2 | @ 4 |
| Nectarines, Red..... | 3 1/2 | @ 4 |
| Peaches, unpeeled, choice..... | 4 1/2 | @ 5 |
| Peaches, unpeeled, fancy..... | 5 1/2 | @ 6 |
| Peaches, peeled, in boxes..... | 9 | @ 12 |
| Pears, unpeeled Bartlett's, halved, fancy..... | 7 | @ — |
| Pears, halved, unpeeled Bartlett's..... | 4 1/2 | @ 5 |
| Pears, quartered, unpeeled Bartlett's..... | 4 | @ 5 |
| Pears, peeled and sliced..... | — | @ — |
| Plums, pitted..... | 4 | @ 5 |
| Prunes, in sacks, 40-50's..... | 5 1/2 | @ 6 |
| 50-60's..... | 4 1/2 | @ 4 1/2 |
| 60-70's..... | 3 1/2 | @ 3 1/2 |
| 70-80's..... | 3 | @ 3 1/2 |
| 80-90's..... | 2 1/2 | @ 3 |
| 90-100's..... | 2 1/2 | @ — |
| Above figures are on basis of 3 1/2 @ 3 1/2c for 4 sizes. Prunes in boxes, 1/2 higher for 25-lb boxes, 1/4 higher for 50-lb boxes. | | |
| 4 sizes Santa Claras and equal..... | 3 1/2 | @ — |

| | | |
|---------------------------------------|-------|---------|
| 4 sizes San Joaquin and Northern..... | 3 | @ — |
| Prunes, Silver..... | 4 | @ 7 |
| COMMON SUN-DRIED. | | |
| Apricots, ordinary..... | 5 | @ 6 |
| Apples, sliced..... | 4 | @ 4 1/2 |
| Apples, quartered..... | — | @ — |
| Figs, Black..... | 2 | @ 3 1/2 |
| Figs, White..... | 3 | @ 4 |
| Peaches, unpeeled..... | 3 1/2 | @ 4 |
| Plums, unpeeled..... | 1 | @ 1 1/2 |

The dried fruit market in the East is outlined as follows by a New York review, coming through by mail of a late date:

There has been a good export demand for prime evaporated apples and market has ruled firm and considerably higher, with other grades also showing more strength. Prime wood-dried sold early in the week at 8 1/2c, but toward the close 8 3/4c has been reached, and some stock is held higher, though wire-dried average 1/4 @ 1/4c under wood-dried. Choice to fancy range from 9 @ 9 1/2c, with some extra fancy fractionally higher. Grades just under prime are held with confidence at 8 @ 8 1/2c, but poorer grades receive little attention, though very few offering and quotations somewhat nominal. Sun-dried apples are in moderate supply and held with confidence when of attractive quality. Chops have been held higher, generally above 4c toward the close, but that is about all that can be realized. Cores and skins firm, but no higher. Small fruits are in light supply, and, with stock in few hands, values are well sustained. California fruit firm.

| | | |
|--|-------|---------|
| Apricots, Cal. Moorpark, 1897, per lb..... | 8 | @ 12 |
| Apricots, Cal. Royal, 1897, per lb..... | 6 1/2 | @ 8 1/2 |
| Peaches, Cal., 1897, peeled, per lb..... | 10 | @ 16 |
| Peaches, Cal., 1897, unpeeled, per lb..... | 5 | @ 9 |
| Pears, Cal., 1897, per lb..... | 5 | @ 10 |
| Prunes, Cal., 1897, per lb..... | 3 1/2 | @ 8 |

Raisins.

There are few layer Raisins to be had at this date, and there are few of any other sort wanted. Loose Muscatel, as also Seedless Muscatel and Sultanas, are being offered freely, but buyers are not readily found, and they have much their own way as to prices. Former quotations are continued, but on Raisins in bulk concessions by sellers are the rule rather than the exception. The vineyards are reported to be in fairly promising condition for the coming crop.

F. O. B. FRESNO DELIVERY.

| | | |
|--------------------------------------|-------|---------|
| Imperial Clusters, per box..... | — | @ — |
| Dehesa Clusters, per box..... | — | @ — |
| Fancy Clusters, per box..... | — | @ — |
| Boxes, London layers, 20-lb box..... | 1 00 | @ — |
| (Usual advance for fractions.) | | |
| Loose Muscatel, 4-crown, 1-lb..... | 3 1/2 | @ — |
| Loose Muscatel, 3-crown..... | 2 1/2 | @ 2 1/2 |
| Loose Muscatel, 2-crown..... | 1 1/2 | @ 2 |
| Sultanas..... | 3 | @ 3 1/2 |
| Seedless Muscatel..... | 1 1/2 | @ 2 |
| Dried Grapes..... | 1 | @ 1 1/2 |

Citrus Fruits.

Oranges were in very fair supply and market was weak at previous range of values, with demand light, other and more seasonable fruit being given the preference. Lemon market ruled quiet and presented an easy tone, stocks being more than sufficient for the immediate demand. Limes tended in favor of buyers, with plenty of Mexican offering.

| | | |
|-----------------------------------|------|--------|
| Oranges—Navel 1/2 box..... | 1 50 | @ 2 50 |
| St. Michaels..... | — | @ — |
| Seedlings..... | 75 | @ 1 25 |
| Tangerines, half box..... | — | @ — |
| Lemons—Cal., select, 1/2 box..... | 1 75 | @ 2 00 |
| Cal., good to choice..... | 1 00 | @ 1 50 |
| Cal., common to good..... | 75 | @ 1 00 |
| Limes—Mexican, 1/2 box..... | 3 50 | @ 4 00 |
| Cal., small box..... | 50 | @ 75 |

Nuts.

Almonds are in such very light stock that only nominal quotations for the same can be given. Walnuts are without quotable change, offerings and demand being both limited. Tendency on Peanuts is to firmer figures, with prospects of very few being produced on this coast the current season.

| | | |
|--------------------------------------|---|---------|
| California Almonds, paper shell..... | 9 | @ 10 |
| California Almonds, soft shell..... | 6 | @ 8 |
| California Almonds, hard shell..... | 4 | @ 4 1/2 |
| Walnuts White, paper shell..... | 6 | @ 7 |
| Walnuts White, soft shell..... | 6 | @ 7 |
| Walnuts White, Cal., standard..... | 5 | @ 6 |
| Chestnuts, Cal. Italian..... | — | @ — |
| Peanuts, Cal., fair to prime..... | 4 | @ 4 1/2 |
| Peanuts, Eastern hand-picked..... | 5 | @ 6 |
| Pine Nuts..... | 7 | @ 8 |

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | | Since July 1, '97. | Same Time Last Year. |
|--------------------|---------|--------------------|----------------------|
| Flour, 4-sks..... | 131,368 | 4,544,856 | 5,182,938 |
| Wheat, cts..... | 48,687 | 9,831,659 | 10,312,951 |
| Barley, cts..... | 39,040 | 4,362,283 | 4,685,462 |
| Oats, cts..... | 3,284 | 623,208 | 512,610 |
| Corn, cts..... | 14,875 | 314,815 | 243,027 |
| Rye, cts..... | 2,450 | 42,106 | 180,933 |
| Beans, sks..... | 5,825 | 535,877 | 523,041 |
| Potatoes, sks..... | 21,266 | 1,015,945 | 1,020,863 |
| Onions, sks..... | 1,572 | 96,874 | 118,142 |
| Hay, tons..... | 2,275 | 112,781 | 126,161 |
| Wool, bales..... | 1,833 | 65,191 | 70,362 |
| Hops, bales..... | 5 | 8,583 | 7,255 |

EXPORTS.

| FOR THE WEEK. | | Since July 1, '97. | Same Time Last Year. |
|---------------------|--------|--------------------|----------------------|
| Flour, 4-sks..... | 43,356 | 2,942,372 | 3,380,783 |
| Wheat, cts..... | 128 | 9,556,076 | 9,678,822 |
| Barley, cts..... | 3,905 | 2,987,475 | 3,576,471 |
| Oats, cts..... | 743 | 17,427 | 31,695 |
| Corn, cts..... | 457 | 38,179 | 22,484 |
| Beans, sks..... | 895 | 291,833 | 350,580 |
| Hay, bales..... | 221 | 73,377 | 60,753 |
| Wool, lbs..... | — | 14,199,776 | 13,864,249 |
| Hops, lbs..... | 526 | 1,310,648 | 1,226,240 |
| Honey, cases..... | 19 | 7,220 | 2,239 |
| Potatoes, pkgs..... | 666 | 180,062 | 75,853 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of the THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It

should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, May 11.—California dried fruits firm; apples strong. Evaporated apples, common, 7 @ 7 1/2c; prime wire tray, 8 1/2 @ 9c; wood dried prime, 9 @ 9 1/2c; choice, 9 1/2 @ 10c; Prunes, 4 @ 8 1/2c; Apricots, Royal, 8 @ 10c; Moorpark, 10 @ 12c. Peaches, unpeeled, 6 @ 8c; peeled, 12 @ 14c.

Warning to Ship Only Clean Fruit.

TO THE EDITOR:—The following resolution was adopted by the fruit growers of California, in convention assembled at Riverside, April 15, 1898, relative to shipments of infested fruit:

WHEREAS, the shipment of wormy apples to San Francisco and other cities is detrimental to the interests of fruit growers, as lowering the price of good fruit and disseminating the codlin moth afresh all over the State; be it

Resolved, That this convention of fruit growers recommend that the State Board of Horticulture take such steps as shall put in operation the laws framed to stop the transportation and exposure for sale of such infested fruit.

Rule VI of the State horticultural regulations, provides:

"Fruit of any kind grown in any foreign country, or in any of the United States or Territories, found infested with any insect or insects, or with any fungi, blight or other disease of diseases, injurious to fruit or to fruit trees, or to other trees or plants, is hereby prohibited from being offered for sale, gift or distribution within the State."

The above regulation will be strictly enforced during the present season and it therefore behooves every fruit grower and shipper

DEWEY, STRONG & CO.
SCIENTIFIC PRESS PATENT AGENCY
330 MARKET ST. S.F.

American Goods in Europe.

Archer Brown, a wide-awake American manufacturer, who has been studying the European industrial situation at short range, writes:

It is in finished forms that the business looks most encouraging. An American machine has come to be regarded in foreign countries something as an American dentist. It is known to be superior to the home make. The Germans especially have been quick to appreciate this fact, and in the past few years have taken enormous quantities of our iron and wood-working machinery, agricultural implements, bicycles, sewing machines, pianos, organs, etc. Last year one firm in Berlin imported \$2,000,000 worth of American machinery, and right here may be an element of danger to American industries. The Germans are very progressive, and are quick to see the advantage of the newest and best methods of manufacturing, and have a far-sighted industrial policy. They propose not only to take care of all their own markets, but to take the lead in the world's commerce. The American machinery that is now going there is helping to equip their factories for a struggle with Great Britain; but when they are once equipped and the present activity in their own iron works has lessened somewhat, they will equip the machinery and no longer have use for the American article. This is already being done to a large extent. An intelligent manufacturer in Freiberg, South Germany, told me they were making American machines all over Germany, and very soon would have no more need of us. They copy our agricultural implements, machine tools, stoves, etc., exactly and produce a superior article. They do not go quite as far as the Japanese, who even copy the name plates and other accidental marks, but they stick close to the American patterns.

It must be said, however, that the English and Germans manage some things better than we do. When a good business is current, they manage to protect the shareholders in their enterprises and secure some profit on it. In fact, the first thought in each enterprise is the dividends. An illustration of this occurred in London the day I left. The Metropolitan Gas Company at its annual meeting the day previous announced that its earnings were insured to maintain the usual dividends to the shareholders, and therefore the price of gas would be raised. There was naturally a howl from the consumers, but the shareholders had to be protected, even though it was claimed that poor management was the cause of the decreased earnings. Railway rates are maintained rigidly three or four times above those we are accustomed to in our country; but, as the directors of the railways point out, they kept their roads out of the hands of receivers. Manufacturers may complain that they are prevented from competing with other nations, but the railway shareholders get their dividends.

The Germans accomplish the result at least in the iron and steel trades, by a wonderful system of syndicating. Their furnaces, steel works, rolling mills and coal mines in Germany are syndicated and the prices maintained at a level high enough above cost to insure good profits. If it is necessary to meet foreign competition in any line the works which happen to be situated on the frontier are instructed to drop prices at whatever point necessary to drive off the intruder.

There seems to be no abatement in London of the fashion of recognizing or "bringing out," as they call it, industrial enterprises. Every London paper prints daily from one to half a dozen prospectuses. The companies that are exploited are located in every part of the world, but the United States cuts a much smaller figure than formerly. We have unloaded onto the British so much industrial rubbish with disastrous results to the investors that there is very naturally a deep-seated prejudice against anything from this side. Their

experience with our railroads has been equally unfortunate. The English seem to have had a wonderful faculty in the past of getting into whatever there was on this side of the water that was peculiarly hazardous. They have been caught by prospectuses, promising enormous profits, and the reaction which followed has even injured legitimate American investment. It is astonishing how many careful London investors hastened to put money in the Middlesbrough, Ky., speculation of five years ago. It is said that something like \$15,000,000 of good English money was sunk there.

The temper of the investor to-day is such that anything with an American label must have a good record of earnings behind it to command any attention. Our gilt-edged and low-priced securities are taken even in huge blocks. But the average promoter has but little chance there unless his venture happens to be in British Columbia, South Africa, Australia, or some other part of the world not tainted with the name of American. I am not sure but that this change will prove a wholesome thing for this country, for we are now passed the period when foreign capital is needed to promote our legitimate undertakings. Too easy access to foreign capital has, in many instances, stimulated ventures in railways, manufacturing, town buildings, etc., that ought never to have been gone into.

The English are a decade behind us in the ordinary comforts and improvements of modern life, but you had better not say that over there. There is not a modern steel office building or business structure, such as we are familiar with in Chicago, New York and many other American cities, in all Great Britain. They still build in massive stone or brick from three to six stories high, having a few steel beams for strengthening the interior of the structure. Occasionally an office building is supplied with an elevator or lift, but these are rare. An Englishman who had seen our superb modern structures in America, told me there were two reasons why they were not adopted in London and other large cities. The first was that the cities would not allow them to be built, and the second was no one would rent their offices if they were built. Their railway tracks are perhaps the finest in the world, but their railway equipment is antiquated to a great degree. The freight cars, "good vans," as they call them, have an average capacity of about seven tons; but the very largest on some lines only carry about five tons. In this country, you are aware, the average freight car now carries thirty tons.

Cast iron pipe is made in 9 foot lengths for the reason that English iron is not clear enough to run into 12-foot lengths, as is customary on this side. English engineers, therefore, whether in England or in the colonies, always specify 9-foot lengths. Our manufacturers underbid them, but bids are usually thrown out because they cannot conform to the 9-foot standard. It is not claimed that the latter has any advantage over the former, but precedent governs. A pipe maker told me that Yokohama, Japan, turned down an American bid for 6000 tons of pipe and gave it to an English manufacturer at \$6 per ton higher price because they were advised by the English engineer that it would be dangerous to put in 12-foot lengths on account of earthquakes in Japan. The Japanese paid \$36,000 as a tribute to a false conservatism.

Our outputs of iron and steel are so large, and our cost of manufacturing has been so greatly reduced by the compulsory education of the panic, that we are selling in nearly all lines at the lowest prices in our history. In a sense this is hard on our makers, but, perhaps, in the long pull, it is the industrial conquest of the world. The prospect for the year is for a very large business, with but little improvement in prices.

The United States Atlantic coast line is 2349 miles long, the Gulf coast line 1556 miles and the Pacific coast line 1810 miles—a total of 5715 miles.

Increase the Profits of the Dairy

BY USING
THE IMPROVED U. S. SEPARATOR
IT IS UNEQUALLED FOR
Close Skimming, Ease of Operating and Cleaning, and Durability

One-Half More Butter.

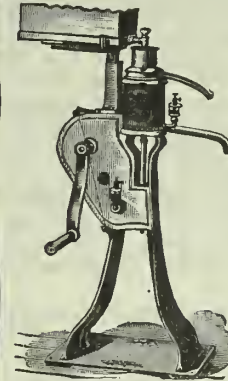
DAKOTA, MINN., April 4, 1898.
I am positive I get one-half more butter since using an Improved U. S. than before. I think it paid for itself in a year, even at the present low price of butter.
J. C. DOLPHIN.

Great Increase in Receipts.

NEW GERMANY, MINN., Feb. 1, 1898.
Before purchasing an Improved U. S., I made
25 lbs. of butter per week, receiving \$0.09 per lb., or \$2.25
After purchasing, I made
40 lbs. of butter per week, receiving19 for it, or 7.60
Gain \$5.35
I further recommend this machine for its high frame, enclosed gears, simplicity of bowl, and ease of running. Any one of my children can operate it without trouble.
JOE PAUL.

Gain from Ten Cows Pays for Machine in One Year.

LEEDS CENTRE, MAINE, Jan. 27, 1898.
The Improved U. S. does everything to perfection. I shall get enough more cream from a herd of ten cows to pay for the machine in one year.
GEO. W. BECKLER.



Good as New After Four Years' Use.

NO. RYEGATE, VT., Nov. 30, 1897.
I have run one of the Improved U. S. Separators nearly four years, and it is doing as good work now as when put in and does not seem to be any nearer worn out. (It was the product of this Separator that secured the GOLD MEDAL in January, 1898, at the Vt. Dairymen's Annual Meeting.)
E. E. SYMES,
Supt. No. Ryegate Creamery.

Catalogues containing full particulars, with hundreds of testimonials like the above, free on application.

VERMONT FARM MACHINE COMPANY, Bellows Falls, Vt.

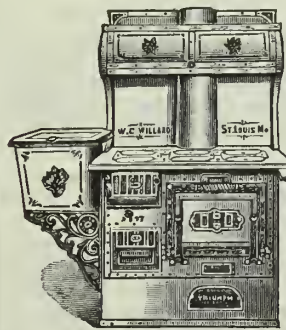
Don't Be Careless.

Don't guess what your cows are doing, but KNOW.
Don't think your cows are all right when you can KNOW.
Don't use an inaccurate Babcock Test.
Don't let your creamery man skin you; keep a check on him.
Send to us for a first-class ten-dollar

No-Tin Babcock Test

and let your creamery man know that you have it. Let six of you club together and get six machines for fifty dollars.
They are well made—regular life lasters.

Elgin Mfg. Co., Elgin, Ill.



\$25 GIVEN AWAY.

THE OLD RELIABLE TRIUMPH STEEL RANGE

Which has always been sold at retail for \$50.00. Made of the highest grade of steel and has six 8-inch lids. The top cooking surface is 30x34 inches, the oven is 12 inches high, 17 inches wide and 21 1/4 inches deep; has a 15-gallon reservoir. Weight 400 lbs. Burns wood or coal and proven to be the best range on the market. Will be delivered to your depot for \$25.00 for a short time only to introduce this range.

WRITE FOR FREE DESCRIPTIVE PAMPHLET.
WM. G. WILLARD, Manufacturer, 113 & 115 N. 2nd St., St. Louis, Mo.

ANTHRAX and BLACK LEG

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Pasteur "Vaccines."

Write for particulars, prices, and testimonials of thousands of American stockmen who have successfully used these remedies during the last three years.

PASTEUR VACCINE CO., 54 Fifth Ave., Chicago.

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330 MARKET STREET; - SAN FRANCISCO, CAL.

Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced first-class agency. We have able and trustworthy associates and agents in Washington and the capital cities of the principal nations of the world. In connection with our scientific and Patent Law Library, and record of original cases in our office, we have other advantages far beyond those which can be offered home inventors by other agencies. The information accumulated through long and careful practice before the Office, and the frequent examination of patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us to give advice which will save inventors the expense of applying for patents upon inventions which are not new. Circulars and advice sent free on receipt of postage. Address DEWEY, STRONG & CO., Patent Agents, 330 Market St., San Francisco, Cal.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING APRIL 26, 1898.

603,003.—DUST PAN—Laura M. Black, San Antonio, Cal.
603,101.—ROCK DRILL CHUCK—E. H. Bourne, Downieville, Cal.
603,175.—SPRING-FORMING MACHINE—C. Collins, Los Angeles, Cal.
603,176.—CAR COUPLING—H. M. Cox, Linden, Cal.
603,178.—WRENCH—M. H. Curry, North Pomona, Cal.
603,133.—SEPARATOR—W. J. Dwyer, Hillyard, Wash.
603,181.—FURNACE—Farrell & Douglas, Morenci, A. T.
603,184.—PIANO PLAYER—F. H. Goolman, Los Angeles, Cal.
603,104.—GAS METER—J. Herbert, Oakland, Cal.
603,029.—FRUIT STENNER—G. Pettit, Fresno, Cal.
603,144.—HOSE NOZZLE—Kellerman & Crane, Montecano, Wash.
603,110.—BOTTLE—J. B. Marshall, Fresno, Cal.
603,029.—FRUIT STENNER—G. Pettit, Fresno, Cal.
603,211.—SURFBOAT—L. W. Stevens, Los Angeles, Cal.
603,119.—WINDWHEEL—E. H. Thompson, Newark, Cal.
603,159.—WRENCH—E. M. Tyler, Auburn, Cal.
603,215.—ROPE RAILWAY—O. L. Van Buskirk, Lodi, Cal.
602,968.—LAND ROLLER—W. Wildman, Spadra, Cal.
NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

ROCK DRILL CHUCK.—Edwin H. Bourne, Downieville, Cal. No. 603,101. Dated April 26, 1898. This invention relates to a chuck or holder for rock drills and is especially designed to automatically lock the drill in place by the simple act of introducing it into the chuck and starting it to work, and it also provides an easy means for releasing it when it is to be removed. It is difficult to fix the shanks to rock drills in the end of the movable driving head or piston so that they will remain tight, and it is still more difficult to remove them when it is necessary. This invention consists of a segment in one side of the socket having an inclined or tapered inner wall and a straight outer wall to fit closely for its entire length in the corresponding wall of the socket. A second segment in the opposite side of the socket has an inclined or tapered inner wall and a straight outer wall, the inner ends of both segments abutting against an internal shoulder in the drill socket. A pin is driven transversely through the upper end of the first-named segment and permanently secures it in place, and a single wedge-shaped key is placed centrally behind the other segment so as to be moved to a point where the segments will stand with such relation to each other that the head of the drill shank, being tapered to correspond with the interior bore of the segments, will lock itself by the impact of the blow when it commences to work. The wedge-shaped key is so constructed that by driving it back or loosening it slightly the segments will be separated and the drill will fall out without difficulty.

COIN-CONTROLLED METER.—J. Herbert, Oakland, Cal. No. 603,104. Dated April 26, 1898. This invention relates to a coin-controlled apparatus which is especially designed for the measurement of gas, water, or other substances which can be so measured, and may also be applied to the measurement of electrical currents by the same mechanical operations. It comprises a coin chute, an adjustable stop in the line of the chute by which the coin is arrested, a gate movable transversely with relation to the coin chute and having a hole made through it, a rod or stem standing in line with the hole so that it operates upon the gate only when the coin is in position between the rod and the gate. An arm is connected and movable with the gate and a vertical screw-threaded shaft is provided with a loosely slidable weight movable upon it, a lever arm carrying a screw-threaded segmental nut is adapted to engage the screw-threaded shaft and retain the weight in position, and as the screw turns the nut will be moved and caused to travel from one end to the other. This is effected by a contact portion of the lever against which the gate-actuated arm presses when the gate is moved so that the segmental nut is disengaged from the screw and the weight allowed to drop. As soon as the gas commences to flow it acts through the usual meter mechanism to turn the screw, and this moves the nut with which the weight is connected until it arrives at the point where it shuts off the supply of gas or other medium until another coin has been introduced, when the operation may be repeated.

Deafness Cannot Be Cured

By local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars, free.

F. J. CHENEY & CO., Toledo, O.
Sold by Druggists, 75c.
Hall's Family Pills are the best.

Coast Industrial Notes.

—The price of Oregon saw logs is \$5 per M.; \$3.50 a year ago.

—Southern California's citrus fruit crop for '98 is estimated at 4,436,000 boxes, which will net the growers nearly \$4,000,000.

—The Mare Island, Cal., government construction and repair departments paid for labor during the first half of April \$63,000, and during the three months ending March 31st \$332,000.

—Last year the Puget sound salmon pack amounted to 494,000 cases, valued at \$1,550,000. If the run of fish is as large this year as expected, it is intended to double last season's pack.

—Russian journals state that the coal discovered last autumn by a Russian expedition on the shore of Ochotsk sea is, as regards quality, better than any other coal known in Russian territory.

—The Los Angeles, Cal., Express says the drouth is so intense on the desert that hundreds of thousands of acres of grease wood is dying. Almost all vegetation between Mohave and Death Valley will be swept away.

—Water is being pumped from the Sacramento river and used to irrigate the farms along its banks. The large Merritt has been fitted out with pumps and engines. At Sacramento a river boat will take hold of the barge and tow her to the neighboring ranches. The pumps on the Merritt can raise 20,000 gallons a minute.

—The daily output of the Santa Cruz, Cal., powder mill is now 5000 pounds of smokeless and 12,000 pounds of brown powder daily. The only delay caused by the recent explosion will be in the manufacture of infantry smokeless; but there is enough of this now on hand to supply 60,000 men for three months. The powder used by the American ships at Manila was made there.

—A circular has been sent out advising the owners of over 200 shingle mills in western Washington to shut them down at once, arguing that war is seriously affecting the business; that shingles have weakened and buyers stopped until they can see how they are affected. Shingle prices have declined somewhat and Eastern orders are decreasing, though this should be the busiest season of the year.

—Consul Smith writes from Moscow: "It is decided by the authorities to have an express service between St. Petersburg and the farthest extremity of the Siberian Railway which is finished. A train will be dispatched twice a month and will make the entire run in six days. The train will consist of one dining car, with library, passenger and sleeping coaches, and will have all modern conveniences. The service will commence in the month of May."

—The sealing season on the coast closed last Saturday, and the schooners, thirty-four in number, are returning home to outfit for the Behring sea season, which opens on Aug. 1st. The coast catch has been good, the estimate from reports received from the points on the coast which the schooners have touched being 7000 skins—2000 in excess of the coast catch last year. The best catches were made off the coast of California, where the schooners had fine weather and found an abundance of seals.

—Raisins, oranges and lemons are the principal fruits the United States imports from Spain, figs and currants to a smaller extent. A lessening of purchases of these fruit products should be of material benefit to California. Raisins grown in California have already checked the imports of Spanish raisins. The exclusion of these Spanish products for six or twelve months would secure a stronger foothold all over the nation for California fruits, extending their consumption and rendering it still more difficult for the foreign fruits to regain their former position.

—"It is a great country, but you cannot do business rapidly there," says J. A. Fairchild, speaking about a recent trip to Mexico. "My journey was made at the solicitation of Mr. Robinson of the Mexican Central Railway. One of my purposes was to look at the large deposits of asphalt found near Tampico. I found them very large, but the quality is somewhat doubtful. We are having tests made which will determine this point. I also went to consider some contracting plans. But you cannot do anything in a hurry there. My visit was preliminary and will be followed by others. The methods in use in letting contracts is in sharp distinction as compared with ours. The Board will meet and look all over all bids and then gradually sift the bids down till they get the one that the entire Board thinks is the best one—that is, the one from which the best work can be expected. The prices have only a secondary consideration. For example, there is now being built in the City of Mexico the finest sewer system on the continent. A French company is doing the work, superintended by Mr. Guyot, the noted engineer. The bid of this company was \$2,000,000 more than the next lowest one, yet it was awarded the contract because it showed conclusively that it could do better and more perfect work in all details than any of the competitors."

Commercial Paragraphs.

The Zenner-Raymond Disinfectant Co. of Detroit, Mich., publish a useful little pamphlet on the use of their preparation, not only for sheep scab, but for many other animal diseases and injuries. It seems to be commended by the highest authorities.

A SPRING, WIRE JOURNAL is the "Coiled Spring Hustler," published monthly by the Page Woven Wire Fence Company, Adrian, Mich. The "Coiled Spring Hustler" will be sent free to any farmer asking for it.

A Beautiful Girl's Affliction.

From the Republican, Versailles, Ind.

The Tuckers of Versailles, Ind., like all fond parents, are completely wrapped up in their children. Their daughter, Lucy in particular, has given them much concern. She is fifteen, and from a strong, healthy girl, three years ago, had become weak and kept falling off in flesh, until she became a mere skeleton. She seemed to have no life at all. Her blood became impure and finally she became the victim of nervous prostration. Doctors did not help her. Most of the time she was confined to bed, was very nervous and irritable, and seemed on the verge of St. Vitus' dance.

"One morning," said Mrs. Tucker, "the doctor told us to give her Dr. Williams' Pink Pills for Pale People, which he brought with him. He said he was treating a similar case with these pills and they were curing the patient. We began giving the pills and the next day could see a change for the better."



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The doctor came and was surprised to see such an improvement. He told us to keep giving her the medicine. We gave her one pill after each meal until eight boxes had been used when she was well. She has not been sick since, and we have no fear of the old trouble returning. We think the cure almost miraculous."

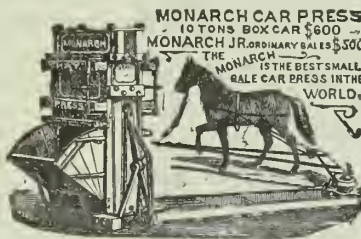
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MRS. FRANK TUCKER.

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HUGH JOHNSON, Justice of the Peace.

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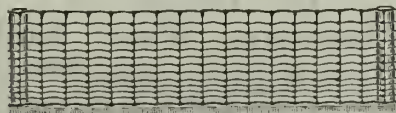
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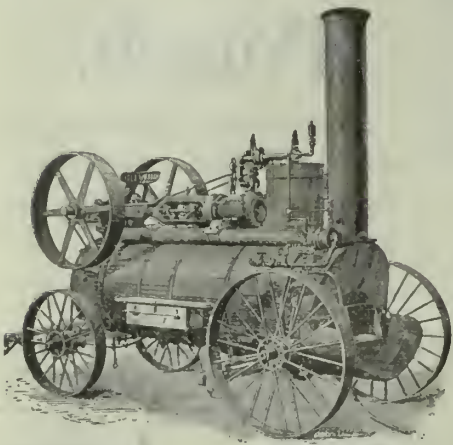
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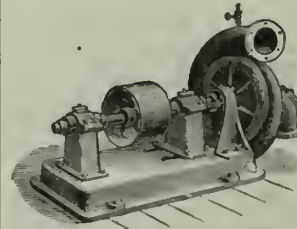
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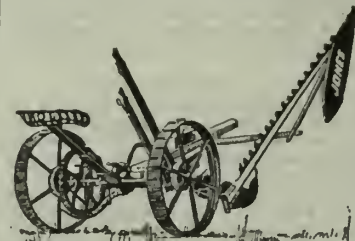
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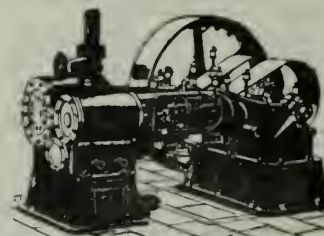
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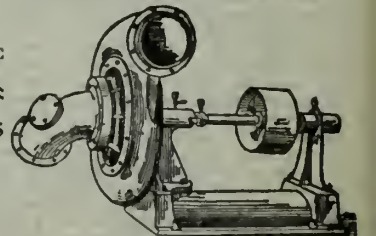
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 21.

SAN FRANCISCO, SATURDAY, MAY 21, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

Two Good Trees for California.

The engravings on this page convey to our readers suggestions of two trees which should be widely planted in California valleys for shade and ornamental purposes. Their value has been fully demonstrated by prolonged trial at the Experiment Stations of the University of California and by wide distribution from those centers to growers in other parts of the State. The engravings we present are from trees at the Stations in Los Angeles county. The recently issued report to which we alluded last week contains much information about the forestry work of the University, as set forth by the inspector, Mr. C. H. Shinn.

The black wattle (*Acacia decurrens*) is one of the trees first distributed by the University, and it is now over twenty years since the first seeds and plants were sent out. The tree was also distributed quite early by nurserymen and very fine, large specimens are now to be found in many parts of the State. It is naturally a strong grower, and when mature assumes huge dimensions. The leaves are double-pinnate; the leaflets very small and of rich dark-green color. The flower heads are

small but very numerous in large panicles, white or pale straw color; very fragrant. One mark of the species is that the seed pods are contracted between the seeds, making it difficult to extract the latter without breaking the pod. This tree is the source of the best wattle bark, which is exported from Australia for tanners' use in other parts of the world. This export began as early as 1823. Its tanning strength is said to be about three times as great as English oak bark. For many years wattle growing for the bark product has prevailed in some parts of Australia, and a similar line of forestry has often been projected for California, but we are not aware that any considerable enterprise in that line has ever been undertaken here, though the analysis of bark grown here shows that its tanning value corresponds very closely with that of the Australian product. The tree is hardy over very great areas of California, as it is said to require a temperature of about 20° F. to injure it. For windbreaks or street purposes, where an evergreen is desired, and for handsome single specimens, the black wattle deserves all its wide reputation in California, and more. The tree is readily

grown from fresh seed, if the seed is given a good boiling water bath before planting. The very rapid growth is shown by the fact that the tree in the engraving is but four years from the seed.

The other tree shown on this page is one of the most striking of the eucalypts, *E. leucoxylon* or *sideroxylon* variety, *rosea*. It is described in the University report as one of the very best ornamental species: an elegant, upright tree, with drooping branches, light glaucous, blue foliage, and rough-fissured, reddish-brown, resinous bark. Mr. Abbot Kinney of Lamanda, Park in his monograph on the eucalypts, describes this species as a great tree for our dry valleys, which is a good point for tree planters to make note of; but the color points of the species are so striking that it should prove very valuable in the hands of landscape architects who have taste to use it well. It has a blue-gray foliage and scarlet flowers, and dark, rough, red bark. The tree sometimes reaches an altitude of 200 feet, but is usually of moderate growth. Mr. Kinney says that the gray of the foliage sets off the striking pink flowers. The stems of the leaves are of similar color. Pink is the nearest description of the color, but it is Australian pink. From our limited local experience, writes Mr. Kinney, we are self-satisfied enough to term many of the Australian growths fantastic. We might say this also of its flower colors. The *Sideroxylon* flower, for instance, is neither red, scarlet, pink nor magenta, but a sort of a mixture of all these colors. The nearest



EUCALYPTUS SIDEROXYLON (VAR. ROSEA.), AT THE SANTA MONICA FORESTRY STATION.



ACACIA DECURRENS OR BLACK WATTLE, AT THE UNIVERSITY STATION NEAR POMONA.

name for it is that which a nurseryman gave, a "madder pink." The color is brilliant. The bark on nearly all specimens is hard, persistent and deep iron red. The trees are attractive, indeed handsome.

The tree shown in the engraving is about 37 feet high and 21 feet in diameter of foliage spread. It blooms in Santa Monica in March and April.

A Figure on the Prune Crop.

Judge W. H. Aiken, a large prune grower on the Santa Cruz mountains, has been looking around and thinking hard, and has made a figure on the prune crop in a private letter which we publish without consent, so the reader has it in confidence and is enjoined not to speak of it. The Judge writes as follows:

I estimate the Santa Clara valley prune crop at one-half 1897 crop, say 30,000,000 pounds of prunes, and allowing 20,000,000 pounds for the rest of the State, makes 50,000,000 pounds, or one-half of California's 1897 output. What do you think of that estimate?

The 1898 prune crop will sell for nearer 6 cents per pound, four sizes, than 3 cents, the average of 1897, and the large sizes will be at a premium. What do you think of that?

At this moment we do not know a thing about it, but we hope so all around.

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E. J. WICKSON..... Horticultural Editor.

San Francisco, May 21, 1898.

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The Week.

The unusually generous and widely distributed May rains put a new face upon the agricultural condition and outlook, and in many respects a far happier face than they could have been naturally expected to have assumed. The result will be a restoration of courage, a revival of interest and energy, a stronger confidence in the future and a better and stronger feeling all around. Our weather-and-crop column this week gives suggestions of this and measure of the precious water which has fallen in the several divisions of the State.

If good use is made of the new opportunity there will result a saving and an increase of comfort which can only be measured by large figures, and whose ultimate influences will fill much larger measure. Though some things are, of course, beyond mending, and some losses irretrievable at this season of the year, there are other interests which can be splendidly served by quick and effective work.

In most fruit regions the rain will promote a condition of cultivation which seemed almost beyond hope for this season. It is quite possible now to guard against much of the injury to trees which we apprehended in our discussion of drouth and fruit trees two weeks ago. The soil has worked splendidly this week and hundreds of acres have been put in good shape to withstand summer drouth. Vegetable plantings have taken on new prospect and extra good cultivation will carry them to production. Beans, beets, corn, squashes, etc., have been put on a new basis and will yield a considerable aggregate value from fields which it was expected would be idle this year. More land is made available for sorghum. In fact stock can be fed in many ways which were not possible without irrigation before the rains fell.

The rains have temporarily exerted undue influence upon local prices. Cereals, fodder and feed materials are weaker in tone, though not in all cases lower. Corn advances because of prospect of higher freights.

Dried fruits are held firmly and promise to clean up well before the new crop. Cattle and sheep are in good tone, without change in values. Dairy products weaken a little with the rain and eggs are higher.

Beans also feel the wet and are reported a little easier. At the moment green vegetables and small fruits have ruled higher as receipts have been less owing to the rain. Of course these rain effects are either merely temporary or speculative.

There has been nothing to permanently effect crops, except perhaps summer crops chiefly to be used at home, and they can only have a very remote effect upon market prices.

The Lessons of the Dairy Exchanges.

We trust other readers than those interested in fruit products gave attention to the points on fruit selling made by Mr. F. M. Righter in his papers in the last two issues of the RURAL PRESS. The writer cited many principles which underlie satisfactory traffic in all commodities—in fact, the excellence of his work consisted in the application of well-known principles of trade to the needs of the fruit producers. Perhaps the fundamental secret of the ill condition which characterizes the selling end of our fruit industry is to be found in the fact that such principles of trade are not applied. But that is not the point we intend to expatiate upon at this time. Mr. Righter's argument set forth that fact very forcibly and described its bearings.

The embodiment of correct trade principles in the dairy exchanges and board of trade certainly merits the prominence Mr. Righter gave it as suggesting a method which could be followed by our fruit growers wherever local production has attained large volume. Possibly some readers may have wondered by what steps the dairy producers advanced to the adoption of sales methods so true to underlying principles and so unique in agricultural marketing. As the writer was from 1871 to 1875 prominently connected with the dairy selling organization which was at that time the largest in volume of transactions in the United States, he cannot resist the temptation to indulge in reminiscences in the hope that he may contribute something to the attention which Mr. Righter's recommendations should command.

The "Dairy Boards of Trade" arose in the year 1871 in Utica, New York. They are not boards of trade in any sense of the term as known in California. They were not for the purpose of arbitrating between debtors and creditors, although they sometimes undertook such arbitration as a corollary. They were not for the purpose of advertising local resources nor of promoting local enterprise. They were actually exchanges for the purpose of promoting and facilitating trade between buyers and dairy-manufacturers by bringing the two classes together with one accord in one place. As Mr. Righter clearly showed, the organization membership was composed of both classes and it undertook no work of a trust or combine: it fixed no prices: it controlled no distribution nor supplies—except as equal knowledge of the general situation tended toward the elimination of fictitious influences and brought the transactions directly to the issue of the quality and availability of the offerings to meet certain demands. This fact was so clearly seen that the name of "exchange" was adopted by the later organizations of the West as more truly descriptive of the purposes and methods involved.

These organizations did not arise from any original conception of their desirability at the time of their establishment. We cannot credit their organizers with the discovery of any great principle, nor even with the instantaneous application of any such principle to pressing needs. The application was made at some most remote date, for whenever the first market day was held, and wherever the first market place was fixed, the foundation of the dairy exchange of the present day was laid. The dairy exchange was then but the outgrowth from the ancient idea of a public market, and its first manifestation was a street market in the village of Little Falls, in the State of New York. In the early days of cheese making in that part of New York cheese buyers from the metropolis visited the dairies, bored the cheese full of holes with their broad gauge "triers," and drove the best bargains they could with all the information as to the actual state of the market on their side—just as the traveling fruit buyers proceed in California at the present day. It was very expensive for the buyers to run over the country, racing against each other in the hope of closing bargains; and it was evidently unsatisfactory for the salesman to transact business without knowing what his goods ought to be worth. It was an acceptable proposition all around when the Little Falls Farmers' Club proposed that the owners of small dairies should load their cheese in their wagons each Monday morning and drive to the vicinity of the freight sheds of the railway in Little Falls, where the buyers could inspect their goods, make

their selections and delivery be made at once to the freight agent. This worked very well for the days of small dairies, when a wagon would hold the week's output from the curing room, and it was found of such advantage to both sellers and buyers that when the export demand encouraged the establishment of cheese factories their produce was sold in the same way, either by sample or by reputation and guaranty of grade, although delivery was not made on the day of sale. Thus the street market was the progenitor of the dairy exchange.

But to do business on the larger scale on the street corner, or in the corner of a saloon or the platform of a freight-house, was more inconvenient than to buy a few cheese out of a wagon. As the transactions grew in volume and value, and as prices were conditioned now upon the markets in the English cities, it became necessary not only to have a place where traffic could be carried on out of the snow or rain or dust, but it was also essential to have the latest information by cable from points of final sale. At this point the reformers appeared and the first dairy exchange was established in 1871 with an exchange room and the paraphernalia of bulletin boards and blackboards and the enrollment of offerings and transactions for inspection of all members. There were still transactions in a small way on the outside; there were still a few solicitors for consignments, but the great bulk of the business was done in the way provided according to the old market-place method of direct individual transaction between buyer and seller, with such advantage to the latter as pertains to the opportunity to learn how others are selling, and thus to become informed of the state of the market at the moment.

California co-operative selling has always undertaken to do more than the dairy exchanges ever attempted. It has undertaken to fix prices or to regulate distribution or to perform both of these functions. There has always seemed to be weighty reasons for both of these undertakings and striking instances of their successes, and yet it may be doubted whether any ground has been gained for the general proposition of the producers regulating price or distribution, though most notable gains have been made in co-operative preparation and packing of the products. This is the very line, too, in which dairy co-operation has scored its greatest triumphs. The co-operative cheese factories and creameries cheapened and improved production, insured uniformity, established standard grades and made large volumes of the product commercially acceptable and brought the traffic out into the open and equalized advantages of information and acumen between buyers and sellers. If we are not mistaken, these are the very services of which our fruit industries stand most in need.

The way to begin such an enterprise is simply to begin. The beginning will be small. No new organization is required: there need be no regulation that those who make offering shall sell in this way and none other. Let the San Jose Farmers' Club make a beginning with the coming fruit crop. Let it announce that the morning of its meeting days shall be market days and send notice to all shippers, driers and canners that fruit will be offered at that time and can be bought according to grades known in that district, if prices are satisfactory. This is the way the dairy exchanges of the West began. They did not have the evolution from the street markets which marked the development of the dairy exchanges of central New York, but they had the example of the success of those markets to inspire them and the idea was so simple that all understood it and appreciated its advantages. Regular fruit selling days and places can be established in all our fruit districts which have products in quantity and quality to tempt buyers, in the same way that the Western dairy exchanges were established. Where shall the movement begin?

Last year Sisal bale rope was quoted at 5c and Manila at 6c in 10,000-lb. lots. This morning Tubbs Cordage Co., Osborne Implement Co. and Hooker & Co. quoted three and four-strand Sisal bale rope in 10,000-lb. lots at 7½c and Manila at 8½c, while two-strand Manila is 9½c. In smaller lots, ½c per pound more. There is a shortage in the Sisal hemp crop in Central America, and shortage and doubt about the Manila from the Philippines.

QUERIES AND REPLIES.

The Value of Foxtail Hay.

TO THE EDITOR:—The value of young foxtail as green feed, and the knowledge that when cut green renders the hay safe to feed because the seed structure is not so penetrating, has led to the curing of a considerable amount of green foxtail for hay. We wish to know how it compares in nutrient value with other hays.—GROWER, Hanford.

The question is very timely and pertinent, and fortunately there is at hand fresh data for answering. A party to whom foxtail hay was offered by a Kings county dealer sent a sample last week to the University Experiment Station at Berkeley for analysis, and Prof. M. E. Jaffa took the subject in hand at once, recognizing the pressing importance of the inquiry suggested. The sample was apparently in good condition, being cut so young that the seed stem was very tender and brittle, and the other armored features of the seed quite tender also. Nearly all of it retained green color on curing. Prof. Jaffa's analysis was as follows:

| | Per cent. |
|-----------------------------|-----------|
| Moisture..... | 12.00 |
| Pure ash..... | 5.39 |
| Crude protein..... | 7.45 |
| Crude fiber..... | 33.53 |
| Nitrogen, free extract..... | 39.63 |
| Crude fat..... | 2.00 |
| Total..... | 100.00 |

The percentages of the different nutrients, as shown by the above figures, prove this hay to be one of considerable value to the stock feeder. Its protein and fat contents are about equal to the average given for cereal hays, as indicated in the following table, showing the comparative values of foxtail and wheat, oat and alfalfa hays:

PERCENTAGE COMPOSITION.

| | Moisture..... | Pure ash..... | Crude protein..... | Crude fiber..... | Nitrogen free ext..... | Fat..... |
|--------------|---------------|---------------|--------------------|------------------|------------------------|----------|
| Foxtail..... | 12.00 | 5.39 | 7.45 | 33.53 | 39.63 | 2.00 |
| Alfalfa..... | 10.95 | 5.43 | 17.60 | 22.63 | 39.31 | 3.08 |
| Wheat..... | 11.67 | 6.95 | 6.48 | 18.72 | 54.33 | 1.85 |
| Oat..... | 10.38 | 6.75 | 8.31 | 23.85 | 47.91 | 2.80 |

It will be noted from an examination of these figures that while foxtail hay contains less than one-half the protein found in alfalfa it rates in this respect but little below that of oat and ahead of wheat hay. Wheat hay has a greater nutritive value than foxtail, owing to the latter having a much higher percentage of crude fiber, the digestion coefficient of which is low, and a lower content of nitrogen-free extract (starch, etc.) which has a high digestion coefficient. Foxtail hay is more closely allied in food value to oat hay than to either of the others mentioned in the table. Of the hays compared, alfalfa ranks the highest and foxtail the lowest. Roughly speaking, if wheat hay is taken at 10, oat would be about 9 and foxtail 7½.

Cross-Pollination of Corn.

TO THE EDITOR:—If sweet corn and field corn are planted together, in rows side by side, (1) Will they mix? (2) What will be the effect on the sweet corn, if any? (3) How far apart would insure immunity from cross-fertilization—in the case of an open, flat field?—R. E. DRUCE, Auburn.

They will mix (1) if the two corns bloom at the same time, otherwise not. (2) Some of the ears of sweet corn will have kernels resembling the field variety and other kernels resembling neither the field nor the sweet, owing to the tendency to reversion which is given opportunity to intrude. (3) It is impossible to say how great a distance; it will depend upon the direction and force of the wind and whether the sweet corn stands on the lee side or not. Insects may also do something in carrying pollen, but bees, the great carriers, do not care for corn tassels. The danger diminishes rapidly as distance increases, but we cannot say at what distance it will disappear. It is an old saying at the East that only one kind of corn can be kept true on a farm; but we cannot insist that it would be true here, considering the dimensions of California farms.

Poisoning Seed to Poison Moles.

TO THE EDITOR:—In regard to the poisoning of moles with poisoned seed, I would state that on April 28th I replanted seeds of pumpkins and sweet corn rolled in five parts flour and one part Paris green. Ten days later the seed not showing any

signs of sprouting, I examined the hills of both pumpkins and corn and in every instance found the seed had decayed and also turned dark. Wishing to experiment with moles to see if the seed would kill them, I caught a mole and placed him in a coal-oil can half filled with soil, also buried some of the poisoned seed for him to eat. I placed the mole in the can in the afternoon and found him dead the next morning. No doubt the Paris green will kill moles, and the seed also. I have replanted seed without any poison on it and think moles will not bother it much, as the poisoned seed in the ground must have thinned them out somewhat.—E. H. CRANE, San Lorenzo, Cal.

This is interesting. Probably very much less Paris green would have done for the moles and not injured the seed. Who has succeeded in poisoning seed without injuring germination and how has it been done? Mr. Crane's experiment seems to show how to kill moles, at least, and to that extent it is valuable. Of course, as an experiment, it is not conclusive, because the mole might have died of the shock or of homesickness. His interior should have been examined for evidence of the presence of the bait and of the corrosive poisoning.

Effective Longevity of Blackberries.

TO THE EDITOR:—I have ten acres near Los Angeles, and I am going to buy ten more that are improved, and among the improvements are two acres of blackberries of the Lawton and Crandall varieties. They are now about seven years old. What I want to find out is how long will these bear without running out, or when ought they to be replanted? In other words, I want a thorough paper that will give me a correct idea of how to plant, grow and handle blackberries as they should be in the State of California.—READER, Minneapolis, Minn.

Articles by blackberry growers appear from time to time in the RURAL PRESS. The most complete account of California practice is given in our book on "California Fruits and How to Grow Them." That book is now out of print and the third edition will not be ready until this fall. The best we can do for you at the moment is to state that there is much difference in the effective bearing age of blackberries, according to soil and treatment, including pruning, cultivation and irrigation. In some soils they give out after three or four years; in others they endure two or three times as long. We may say that, under favorable circumstances and treatment, eight years is thought to be about as long as they should go without renewing. Then the land should be given a change of crop before replanting to blackberries. The varieties you have are the best for this State, and you can replant cheaply, as you have the plants on the ground.

Ants, Flies and Gophers.

TO THE EDITOR:—My house is infested at present with ants, and every remedy known to me has failed to drive them out of my pantry. Please let me know through the RURAL PRESS the best means of getting rid of them, and also flies. Is the Pasteur virus a success now for exterminating squirrels and gophers?—JAS. A. GIRARD, Cayucos.

There are two recourses which we can commend for ants: one is to shut them out by filling all cracks and crevices around the pantry with paint or cement, if the cracks are wide. The other is to find their holes in the earth outside and pour down an ounce or two of carbon bisulphide, such as is used for squirrel killing when the ground is moist. With ants this will work whether the ground is dry or wet. Flies must be reduced as much as possible with screened windows and doors, and those which do enter must be trapped with stick 'em fly paper. The Pasteur virus is, according to reports, making a good record with ground pests. We have not personal experience, but others seem to be succeeding. A very large trial is being made in Santa Clara county, and in his last report to the Supervisors Commissioner Ehrhorn says: "I have undertaken a series of experiments for the eradication of gophers and ground squirrels with Pasteur virus, and I am pleased to state that some very encouraging reports have come to the office. Ten districts have taken up the trial and four more will try the virus this month." We shall watch with interest for the conclusion of these experiments.

THE Sacramento hay growers have held a meeting and resolved not to send hay to this city to be sold on commission, that they condemn the close auction system and that they should obtain not less than \$13 per ton for first cutting alfalfa hay on the bank.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 16, 1898.

By W. H. HAMMON, Station Director.

The heaviest rainfall, except one, since January, and in some sections the heaviest of the season, occurred in California at the close of the week. Over an inch of rain fell at a number of stations in the central and southern coast portion. At Los Angeles the rainfall amounted to 1.46 inches. The rainfall in excess of the normal varied from about three-quarters of an inch to one inch and over, except on the northwestern coast, where the rainfall was below the normal about one-tenth of an inch. The rainfall breaks the long drouth, and while too late to be of much benefit to the chief agricultural interests, reinforces the water supply and will in many ways be of the utmost advantage. The temperature has been below the normal, and the weather generally cloudy. The cold, cloudy weather has been beneficial to whatever late sown grain is still alive; summer-fallowed grain is heading out and some patches will yield a fair crop. All hay that was cut was damaged somewhat by the rain. Fruit will be greatly benefited. Raisin and other grapes are thrifty and promise well. No further mention of thrips is made. Cherries were ripening nicely, but the heavy rain will split the ripe ones. Black Tartarians are reported as badly blighted in one county. Owing to heavy rainfall beans will probably be planted. The rain has greatly benefited beets and hops.

SHASTA.—Cutting alfalfa; fair crop. Rain Saturday and Sunday will benefit grain and vegetables.

PLACER.—Hay about three-fourths of a crop. Cold weather filling wheat and barley nicely, and these now promise average yield; fruit doing well.

YOLO.—Rain very beneficial to fruit and late sown grain but will damage cut hay.

SACRAMENTO.—Heavy rain will injure cut hay but benefit grass, grain, orchards, vineyards and hop fields, which show need of moisture.

SOLANO.—Heavy rain Saturday and Sunday may damage hay and few ripe cherries, but otherwise will be beneficial. Grapes heavy; prunes and peaches doing well.

SAN JOAQUIN.—Half an inch of rain; will do very little damage, as but a small quantity of hay was cut; will benefit growing grain and late fruit.

STANISLAUS.—Rain and cool weather will make fair crop on summer-fallow; winter sown grain will make straw. Grain and hay inside canal limits doing well.

MERCED.—Wheat heading out on summer-fallowed land and some patches will yield fair crop if cool weather continues two weeks.

FRESNO.—Rain helped growing grain; no damage to cut hay. Fruit trees doing well. No apricots or peaches. Grape vines sprouting. Rain will make hay of some wheat; otherwise a total loss. Thrips not doing damage expected.

KINGS.—Not much hay damaged by rain. Feed prospect good; full crop of raisins.

TULARE.—Rain Sunday will probably injure dry feed and hay. Some grain in irrigated sections will be cut for hay. Prunes, almonds and peaches doing well.

KERN.—Rain beneficial to growing grain. Bulk of first crop of alfalfa cut and cared for. Cutting grain hay on irrigated lands. No apricots, peaches or almonds. Good crop of grapes.

LAKE.—Rain did more damage than good; first crop of alfalfa nearly cut and hauled; yield fair. Grain crop will be three-quarters of normal yield. Vines are very thrifty and making excellent growth. Not much pasture except along the lakes.

SONOMA.—Rain Sunday damaged volunteer hay ready cut; great benefit to everything else except range feed.

ALAMEDA.—Rain will do much good to beets, fruit, hay and grain. Black Tartarian cherries blighted badly. Dry feed injured.

SAN BENITO.—Cool, foggy weather benefited hay. No grain will be harvested. Prunes doing well. Light crop of peaches and apricots.

SAN LUIS OBISPO.—Fair horses sold for \$1.25. Cattle nearly all sent out of country.

SANTA BARBARA.—One inch of rain Sunday; too late for grain. If sufficient rain falls beans will be planted.

VENTURA.—One inch of rain Saturday followed by heavy west wind which dried the ground. Late barley and fruit benefited; grain and beans too far gone.

LOS ANGELES.—(Bassett)—One and one-half inches of rain. Hay on ground will be damaged, but more good than harm. (Duarte)—Heavy rain of great benefit for irrigation. (Los Angeles)—Heavy rain; great benefit to beans, sugar beets, corn and all crops. (Palmdale)—Showers will start pasture; fine crop apples, pears and small fruits. (Fernando)—One inch of rain; will greatly benefit fruit. (Pomona)—One inch of rain greatly benefited orchards and beets.

SAN BERNARDINO.—Rain helped feed and in some places hay and grain. Heavy rains in mountains have increased summer supply.

ORANGE.—Good rain. Some damage to hay; other crops improved. EUREKA SUMMARY.—The dry weather was beginning to affect grass and grain, but the late rains gave impetus to all kinds of crops.

LOS ANGELES SUMMARY.—Cool, cloudy weather favored crops. Week ending with rain, which will benefit feed, trees and root crops, besides adding to water supply.

The following data for the week ending 5 A. M., Wednesday, May 18, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week... | Total Seasonal Rainfall to Date..... | Total Seasonal Rainfall Year to Same Date..... | Average Seasonal Rainfall to Date..... | Minimum Temperature for the Week..... | Maximum Temperature for the Week..... |
|----------------------|--------------------------------|--------------------------------------|--|--|---------------------------------------|---------------------------------------|
| Eureka..... | .06 | 31.93 | 49.20 | 44.88 | 46 | 56 |
| Red Bluff..... | 1.08 | 13.38 | 24.17 | 25.01 | 48 | 90 |
| Sacramento..... | 1.14 | 10.01 | 17.56 | 20.38 | 46 | 88 |
| San Francisco..... | 1.31 | 9.06 | 23.21 | 22.94 | 47 | 58 |
| Fresno..... | .76 | 4.79 | 10.52 | 9.59 | 48 | 96 |
| San Luis Obispo..... | .98 | 7.14 | 20.75 | * | 44 | 70 |
| Los Angeles..... | 1.46 | 6.83 | 18.88 | 17.09 | 46 | 80 |
| San Diego..... | .26 | 4.72 | 11.70 | 10.32 | 52 | 70 |
| Yuma..... | .00 | 1.66 | 5.35 | 3.03 | 50 | 102 |

* No record.

HORTICULTURE.

Our Horticultural Exports.

Eighth Annual Report to the State Board of Trade of Shipments of Fruit Products and Vegetables from California.

By GEN. N. P. CHIPMAN, Chairman Committee on Industrial Resources.

I herewith present the eighth annual report of the shipments from the State of fruit, wine and brandy, and vegetables, the products of our orchards, vineyards and gardens for the year 1897. In 1890 I submitted the first authentic report published up to that time, showing the value of our orchards in adding wealth to our people and the importance of the fruit industry in the future development of the State. The figures then shown were a surprise to ourselves, and few persons were willing to believe that our fruit, wine and brandy for that year, sold without the State, exceeded in value the exports of wheat and flour. But such was the fact. When the statement was made that the shipments of fruit amounted to 16,194 carloads, it was received at first with incredulity; but the figures could not be attacked for they came directly from the transportation companies. The result was to arouse in the minds of many persons a doubt as to our ability to find a market for a greater output, and the question of overproduction has been the source of much discussion ever since. I have on many occasions been called upon to combat the fears of planters; and, with the assurance of this Board and intelligent orchardists, in support of the view that the market was practically unlimited for good fruit, properly prepared, our orchards have expanded beyond all previous hopes of the industry. Our shipments out of the State for the year 1897 of fruit alone amounted to 36,440 carloads. Adding wines and brandy 6897 cars, and vegetables 4734, gives us a total of 48,071 carloads. The tables forming a part of this report should be carefully studied, as they present the growth of the industry for eight years and the gains and losses in particular kinds of products. Compared with 1896 the gains and losses have been as follows:

| | Carloads. | |
|------------------------|-----------|-------|
| | Gain. | Loss. |
| Green deciduous fruits | 1471.2 | |
| Citrus fruits | | 60.9 |
| Dried fruits | 2063.7 | |
| Raisins | 463.1 | |
| Nuts | 83.6 | |
| Canned fruits | 2791.8 | |
| Vegetables | 3116.3 | |
| Wines and brandies | | 711.2 |
| Total net gain | 9817.6 | |

Dried Fruits.—The increase in dried fruits over the output of 1896 has done but little more than restore the output of 1895. Indeed, when we add the known increase in prunes for 1897 this apparent increase in dried fruits will be almost entirely accounted for. In my report for 1896 I showed that the prune production amounted to 53,000,000 pounds. The reports made to me by the transportation companies do not segregate the different kinds of dried fruits, except that prunes were partially segregated, and from these reports we find that there were shipped from the State during the past year 82,902,680 pounds. Of the dried fruit accounted for from which prunes were not segregated I estimate 600,000 pounds, which added to the known shipments above stated make total shipments of prunes 83,902,680 pounds. Assuming that we carried over into the present year the same quantity carried over last year would give the output of prunes for 1897 to be in round numbers 83,500,000 pounds, which shows an increase over 1896 of 30,500,000 pounds. The largest importation of prunes was in the year 1887, when we imported into the United States 92,032,620 pounds. From the best information obtainable, we produced in California that year only 2,000,000 pounds, which shows that the consumption ten years ago was about 8,000,000 pounds greater than the present production in California. The population of the United States has increased over 10,000,000 since 1887. Importations have practically ceased and will not be resumed to any marked extent under present tariff protection. We have successfully exploited the European market for prunes and find that we can compete with the French and German article on their own ground when those countries do not have excessive crops. Our secretary, Mr. Filcher, estimates that we shipped about 800 carloads of dried fruit, mostly prunes, last year to Hamburg, as the result largely of our exhibit at the international exposition in that city. I conclude, therefore, that the prune situation is not so discouraging as many suppose.

Canned Fruits.—The gain in canned fruits shows a very satisfactory and encouraging increase. Our largest previous shipment was in 1894, when we sent out 6035 carloads. The increase is 1311 carloads above our best previous year.

Fresh Fruits.—We reached the maximum of green deciduous fruit shipments also in 1894, being 8069 carloads against 7235 last year. This branch of the industry is still struggling to overcome drawbacks, to say the least, very discouraging to shippers. Our growers cling with great tenacity to the belief that

GENERAL SUMMARY AND COMPARATIVE TABLES OF SHIPMENTS BY RAIL AND BY SEA OF FRUITS, WINE, BRANDY AND VEGETABLES FOR EIGHT CONSECUTIVE YEARS—TONS OF 2000 POUNDS.

| KINDS. | 1890. | 1891. | 1892. | 1893. | 1894. | 1895. | 1896. | 1897. |
|---|----------|----------|----------|----------|----------|-----------|----------|----------|
| Green deciduous | 34,042.0 | 50,548.9 | 59,374.5 | 80,112.3 | 90,692.2 | 66,254.8 | 57,638.3 | 72,350.2 |
| Citrus fruits | 34,309.6 | 46,921.4 | 34,857.5 | 80,757.0 | 58,964.0 | 115,325.5 | 99,156.0 | 98,547.0 |
| Dried fruits | 32,297.5 | 32,919.0 | 29,782.2 | 45,386.2 | 51,828.2 | 61,326.4 | 48,522.8 | 76,159.7 |
| Raisins | 20,560.1 | 22,779.1 | 26,673.4 | 37,409.9 | 46,954.4 | 34,390.1 | 34,431.6 | 39,065.8 |
| Nuts | 787.1 | 1,358.9 | 2,061.9 | 1,799.5 | 3,953.5 | 2,234.7 | 4,972.6 | 5,808.6 |
| Canned fruits | 40,960.9 | 32,395.0 | 55,273.7 | 31,636.3 | 60,353.6 | 41,305.5 | 45,546.9 | 73,464.7 |
| Carloads fruit by rail and by sea | 16,195.7 | 18,692.2 | 20,800.3 | 27,708.8 | 31,274.4 | 33,547.2 | 29,026.7 | 36,439.6 |
| Carloads vegetables by rail | none | none | none | 6,978.1 | 4,276.6 | 3,913.6 | 1,130.6 | 4,243.8 |
| Carloads vegetables by sea | reported | reported | reported | none | 410.0 | 40.0 | 487.7 | 490.8 |
| Carloads wine and brandy by rail and sea | reported | reported | reported | 6,620.9 | 7,663.5 | 8,056.8 | 7,609.0 | 6,897.8 |
| Carloads fruit, vegetables, wine and brandy by rail and sea | 16,195.7 | 23,317.3 | 25,632.8 | 40,928.5 | 43,624.7 | 45,357.4 | 38,254.0 | 48,072.0 |

SHIPMENTS OF FRUIT OUT OF THE STATE BY RAIL IN 1897.—TONS OF 2000 POUNDS.

| PLACE OF SHIPMENT. | Green Deciduous. | Citrus. | Dried. | Raisins. | Nuts. | Canned. | All kinds. |
|------------------------|------------------|----------|----------|----------|---------|----------|------------|
| NORTH CAL. | | | | | | | |
| San Fran'co. | 72.6 | 22.3 | 4,783.9 | 232.1 | 441.1 | 15,865.9 | 21,420.9 |
| Oakland | 3,430.9 | | 239.4 | | 132.8 | 3,939.8 | 7,742.9 |
| San Jose | 12,598.3 | | 29,533.7 | 2.6 | 38.3 | 6,621.0 | 48,793.9 |
| Stockton | 10,836.7 | 1,500.5 | 19,182.4 | 34,758.8 | 182.6 | 1,775.7 | 68,236.7 |
| Sac'to. | 41,493.1 | 246.6 | 7,767.0 | 818.5 | 700.8 | 5,527.8 | 56,583.8 |
| Marysville | 2,655.2 | 1,097.4 | 4,154.4 | 245.9 | 94.7 | 4,289.4 | 12,537.0 |
| Total tons. | 71,086.8 | 2,866.8 | 65,660.8 | 36,087.9 | 1,593.3 | 38,019.6 | 215,315.2 |
| Total car's | 7,108.6 | 286.6 | 6,566.0 | 3,608.8 | 159.3 | 3,801.9 | 21,531.5 |
| SOUTH CAL. | | | | | | | |
| Los Angeles | 382.3 | 53,815.2 | 5,109.4 | 324.6 | 3,221.3 | 23,134.0 | 85,986.8 |
| Orange Co. | 1.0 | 5,772.0 | 298.0 | 304.0 | 941.0 | 29.0 | 7,340.0 |
| Riverside Co. | 37.0 | 1,768.0 | 286.0 | 90.0 | | 1.0 | 2,182.0 |
| S. Bern'do Co. | 7.0 | 8,207.0 | 2,666.0 | | 21.0 | 360.0 | 11,951.0 |
| San Diego Co. | 29.0 | 3,118.0 | 279.0 | 1,090.4 | | 3.0 | 4,830.0 |
| Total tons. | 456.3 | 65,880.2 | 8,633.4 | 2,709.0 | 4,183.3 | 23,547.0 | 112,289.8 |
| Total car's | 45.6 | 9,568.0 | 863.3 | 270.9 | 418.3 | 2,354.7 | 11,228.9 |
| Car's State. | 7,154.2 | 9,854.6 | 7,429.3 | 3,879.7 | 577.6 | 6,156.6 | 32,760.4 |
| Car's by sea | 80.7 | | 86.5 | 26.8 | 3.2 | 1,189.9 | 1,387.1 |
| Total car's sea & rail | 7,234.9 | 9,854.6 | 7,515.8 | 3,906.5 | 580.8 | 7,346.5 | 34,147.5 |

SHIPMENTS OUT OF THE STATE BY RAIL IN 1897 OF WINE, BRANDY AND VEGETABLES—TONS OF 2000 POUNDS.

| PLACE OF SHIPMENT. | Wine | Brandy | Wine and brandy not seg'gated. | Vegetables. |
|-----------------------------|----------|---------|--------------------------------|-------------|
| NORTHERN CALIFORNIA— | | | | |
| San Francisco | 29,001.6 | 1,441.0 | | 8,730.1 |
| Oakland | 685.1 | 13.9 | | 243.0 |
| San Jose | 1,634.0 | 154.3 | | 418.5 |
| Stockton | 3,155.9 | 505.4 | | 6,407.5 |
| Sacramento | 11,705.7 | 163.0 | | 8,289.6 |
| Marysville | 1,103.0 | 368.4 | | 125.3 |
| Total tons | 47,285.3 | 2,646.0 | | 24,234.0 |
| Southern California— | | | | |
| Los Angeles | 1,972.9 | 77.1 | 1,652.0 | 15,855.9 |
| Orange Co. | | | | 2,231.0 |
| Riverside Co. | | | | 13.0 |
| San Bernardino Co. | | | | 14.0 |
| San Diego | | | | |
| Total tons | 1,972.9 | 77.1 | 1,652.0 | 18,203.9 |
| Total by rail from State | 49,258.2 | 2,723.1 | 1,652.0 | 42,437.9 |
| Total car's by rail | 4,925.8 | 272.3 | 165.2 | 4,243.8 |

SHIPMENTS OUT OF STATE OF FRUITS AND VEGETABLES BY SEA IN 1897—TONS OF 2000 POUNDS.

| | From San Francisco. |
|-----------------|---------------------|
| Green deciduous | 807.1 |
| Dried | 865.5 |
| Raisins | 268.3 |
| Nuts | 32.0 |
| Canned | 11,890.0 |
| Vegetables | 4,908.1 |

SHIPMENTS OUT OF STATE OF WINE AND BRANDY BY SEA IN 1897—TONS OF 2000 POUNDS.

| | From San Francisco. |
|--------|---------------------|
| Wine | 15,304.1 |
| Brandy | 40.5 |

there will yet be found a way to profitably ship our fresh fruits to Eastern markets.

Vegetables.—Our shipment of vegetables ran down from 6978 carloads in 1893 to 1618 in 1896. We brought the figure back to 4733 in 1897.

Citrus Fruits.—Our orange and lemon shipments reached their maximum in 1895 with 11,582 carloads. Last year fell behind that year 1728 carloads and behind 1896 by sixty carloads. It will be observed that our reports upon citrus fruits cover, as in other products, the calendar year, and not the market year, which for oranges begins in December and extends into the following year, the bulk, however, going out after December. For practical purposes and in a period of years these reports fairly mark the growth and extent of the orange and lemon industry. The expansion of orange growing in northern California has been watched with much interest. In 1893 we sent out of the State four carloads; in 1896 we had reached eighty-one carloads; last year we sent 286 carloads. The first oranges in the market come from the north, and hence at present the larger part are consumed at home. The oranges finding market abroad from the north go principally from the upper San Joaquin valley and from Butte county, and some from the vicinity of Newcastle.

The Future.—The fruit growers of the State have not realized the profitable returns that were anticipated from the business, as appeared certain in 1890; 1891 and 1892; and many growers are hesitating whether to devote their lands now planted to other uses, while it is quite evident that the planting of new orchards is much retarded. My own view

upon the subject briefly stated is that a restoration of general prosperity throughout the country will give to us the market we desire at profitable prices. We cannot expect that people will buy fruit in large quantities at high prices so long as wages remain low and a large part of our population is idle. The conditions for trade must exist, or there can be no trade; and yet we must not forget that in 1897 we sold 36,440 carloads, which was 3000 carloads more than we ever before shipped from the State in any year, and there was perhaps less dried fruit on hand in January of this year than ever before at the beginning of the year. We shall get the price we want when our people can afford to pay it. The remedy is not in digging up our orchards, nor in ceasing to plant trees; but it is in the adoption and enforcement of such national policies as will restore normal conditions in trade. There can be no doubt but that the movement into Alaska will create a practically new demand for our dried and canned fruits without diminishing the Eastern trade. The miners of the Yukon and outfitters for Alaska regions must look to California for their supplies. I should think that 100 pounds for a year's supply would not be too great per capita; 100,000 men would therefore consume 10,000,000 pounds. We have no means of showing the quantity now finding market in Europe, as the fruit is reshipped from Eastern points. But we know it is large and increasing. The truth is that the intelligent fruit growers of California have stood the pressure of hard times for the past three or four years better than any other class of our agriculturists, and have, I think, brighter prospects before them.

Southern California Apples.

For a long time, says the *Pomona Beacon*, it was believed that good apples could not be grown in southern California, and most of the apples consumed here were imported from the North and East. This fallacy has, however, been thoroughly exploded. Some of the finest apples that have ever been seen or tasted are now raised in southern California, especially in the San Diego mountain country, also around Westminster and Downey, and in the Antelope valley, which last-named place promises to become one of the leading apple-growing regions of California, as well as a great producer of almonds and olives.

The Chinese of Pleasanton are making extensive preparation for the hard times this year by drying great quantities of cabbage.

FLORIST AND GARDENER.

Further Notes on Chrysanthemums:

We recently gave some notes on chrysanthemum growing by George N. Tyler, the Alameda florist, and no doubt some more explicit information will be acceptable to our readers who desire to rebuke the dry year with a glorious show of verdure and color the coming summer. This they can do with rich soil and a small amount of water if it is applied to a small piece of ground and accompanied with diligent cultivation. Glorious results can be attained even with the waste water from the bath and wash tubs, if it is wisely used, so none need shun the undertaking because of scant water supply. Mr. Tyler writes interestingly of the present standing of the chrysanthemum as well as of its cultivation.

Wane of the Flower.—Chrysanthemums are gradually going out of public favor and there will not be near as many grown this year as last. Although they are natives of Japan and China, the American growers are the ones who have perfected them and made them what they are to-day. About 2500 varieties have been introduced up to date. Of this number about 10 per cent are worth cultivating. Although new varieties are being introduced from year to year, the new introductions are no improvement on existing varieties. The perfection of the carnation is the main cause of the downfall of the chrysanthemums. As queen of the autumn, the demand for the large flowers is on the decrease, and it does not pay the nurseryman to grow them for a price less than \$1 a dozen wholesale. What the pub-

lic demand is a cheap flower that will cost about 75 cents a dozen retail.

Cuttings.—You can put in cuttings of chrysanthemums from now until the 10th of July for single-stemmed plants with one or more flowers. Before taking the cuttings spray and water the old plants that were cut down last winter about a day before taking the cuttings. This is to make the plants as full of moisture as possible and the cuttings root better. If the plants have thrown up lots of suckers from around the old plant, you can take the tips.

But two-eye or even single-eye cuttings (if you are short of wood) are the best. The two-eye cuttings are made by cutting slantingly just above an eye or joint and just below an eye, making a slanting cut. Use a very sharp knife. The cuttings should be inserted in sand or sandy soil and kept thoroughly shaded and wet.

Late propagation is all right if you keep the cuttings soaked all the time. Single-eye cuttings can be made by cutting just above an eye and leaving about an inch of stem below the eye. They will root in about four weeks. A cutting should never be allowed to wilt from the time it is taken up until it is a plant in full bloom. The main point in growing good flowers is to keep the plant in a growing state all the time, and to keep the growth soft-wooded. As soon as a plant wilts it will get hard-wooded and an inferior flower will be the result. The cuttings should never be allowed to stay in the sand after they have rooted, as they will run up spindly, and this is a check.

Plants for Blooming.—Plant in thoroughly enriched beds (the beds 4 feet wide) in rows 1 foot apart and 10 inches between plants. Shade for the first week after setting out, and after that give full sun. An eastern exposure is best when they are planted out, sheltered from the strong winds. When they are transplanted give a good watering and keep them sprayed until they take hold of the new soil and recover from the transplanting. A heavy soil is best. A soil that will grow good roses will grow good "mums." Stake them before they get over 8 inches high, for if you delay it until they grow a foot or two you will break off some of the roots where you put the stake down. But by staking early the plants send out roots around the stake. The best stakes to use are made of split shakes. A bundle of split shakes costs 35 cents. There are twenty-five shakes in a bundle and each shake will make sixteen stakes.

If you want to grow bush plants pinch out the tips when your plants are 8 inches high. The plants will then throw out new shoots from the joints, and after these have made a growth of 6 inches pick out again. But do not let your plants grow up 2 feet high and then cut them back, or you will get very inferior flowers. Do not pinch back later than August 1st.

Fertilizing.—If you put in cuttings now they will be ready to plant on the 10th of June. About July 10th give them a mulch of thoroughly decayed manure about 1 inch thick, as the chrysanthemum is a top feeder. About August 1st, if you will examine, you will find that the feeding roots have run up into the mulch. Begin feeding liquid manure about that date. Do not make it too strong at first, and twice a week is often enough to water them, with manure water for the first two or three weeks. After that you can make the manure water stronger and feed oftener.

If the foliage of your plants turns yellow or light colored, it is a sign of too much fertilizer. The remedy is to stop watering for a few days and top dress the soil with slacked lime and charcoal in equal proportion. Stop feeding when the buds set, but attend carefully to the watering. As soon as the buds begin to swell begin feeding again, and feed until the buds show color, but do not give any fertilizer after this time, or the flowers will come deformed and bull-headed. Fertilizer will also bleach the color.

Irrigation and Care.—Your plants should be watered and sprayed once a day regularly, so as to keep the growth soft. But be sure and never spray after the buds begin to swell, for any moisture on the bud or flower is the ruin of it. As soon as the plants set their buds such growth will start at every joint. These should be picked off as soon as you can get at them. In disbudding, disbud from the top down and from the center of the bud out. Your plants, after disbudding, will throw out suckers. These should be cut off as close to the main plant as possible, for if they are allowed to grow they will rob the plant of a great deal of nourishment that would have gone to increase the size of the flower.

Choice of Buds for Blooming.—Now, as to the buds to take to make your flowers. They are divided into three classes—the early crown, which forms from the 15th of August until the 15th of September; the late crown bud forms after the 15th of September. Immediately after the crown bud sets the plant throws out three shoots at the base of the crown bud. If the early crown bud is the one that you want to make your flower, rub these shoots off. If these are allowed to grow they rob the crown bud of its strength and it soon dries up. These shoots grow on and form what are called the terminal buds. If you wish to grow three flowers let these shoots

remain, but if one flower is desired rub off the two weaker shoots. The one left on will grown on and form a new set of buds, and the center one of these is the terminal bud. You can always get a perfect flower from the terminal bud, and if you do not know what bud to take select the terminal, and you can't make a mistake.

Some varieties seldom make a crown bud when propagated—that is, after June 1st. In growing under glass they must have abundance of air night and day, with a dry atmosphere and with no shading on the glass.

Fighting Pests.—The chrysanthemums' pests are next in order. The green lice are the first that attack the plants. If the plants are grown outside, dust tobacco dust on the crown of the plants or make a tobacco tea by taking tobacco stems and pouring boiling water over them. Let them stand for twenty-four hours; then add clear water until the liquid is the color of weak coffee. Spray the plants with this liquid. Always use the mixture fresh, as it has more strength, and if allowed to stand a few days will start fermenting and it soon loses the nicotine, which is the ingredient that is death to the lice.

If you grow under glass, fumigate once a week a week at dusk by burning some of the dampened tobacco stems, and allow the smoke to stay in the house all night. Grasshoppers like to feed on the tender stem and heart of a chrysanthemum. Diabrotica or green ladybugs are a terrible pest.

To go over your plants and pick them off is one way of getting rid of them, but air-slaked lime dusted on the plants keeps them away in a measure.

The climbing cutworm is another pest. It only works at night and in the daytime hides under the leaves or in the soil at the base of the plant. These can be found if you look your plants over where they have been feeding. But if you are unable to find them in the daytime go out at night with a lantern, and you will find them feeding on foliage at the top of the plant.

Caterpillars are another pest, and should be picked off and destroyed whenever you see them on the plants.

How to Handle Amaryllis.—Amaryllis are a different class of bulbs from hyacinths or narcissus, and require a different treatment. They are very impatient of being moved, and often do not bloom the first and sometimes the second year after being divided. But they can be moved and divided if it is done at the proper time, and they will (at least a large percentage of them will) flower the following year after replanting. The amaryllis throws up a flower stock and blooms before any of the foliage appears. Generally in the month of September, and after the flowers wilt and decay, the bulb begins its growth, and grows through the winter and spring months, and about this time of year the foliage begins to turn yellow. If you desire to move and divide them you can do so in September and October. Immediately after the flowers wilt, and before any growth starts, you can take them up, divide and replant and they will go ahead and grow their foliage and form a dormant flower bud for the following fall, and when the time comes blooms as though nothing had happened. They cannot be moved at any other time of the year with good results.

ENTOMOLOGICAL.

The Red Spider.

This pest is all the worse in a hot, dry year, and many will suffer this year who are not usually much troubled. Look out for this very obnoxious insect, which, though one of the very smallest of orchard pests, does much damage some years, and sometimes seem to spring into existence without reason or cause.

"Orchardist" of Saratoga gives the *Item* a very interesting account of experience with red spider. The writer at one time put out a large nursery on a piece of land entirely isolated, there being no trees of any kind within a mile of the place. The peach seedlings came up and did finely, making the remarkable growth of 6 to 8 feet the first year. On July 10th, in walking through the lot of young trees, he saw at a distance two patches in the block of trees where the trees were turning yellow, and knew at once that it was red spider. Now, how did they get there? The only conclusion that he could arrive at was that the eggs had been carried there by birds. This was near Madera, then Fresno county, but now Madera county. From the 2nd to the 7th of July, that year, the thermometer registered 119°, 121°, 122°, 118° and 115° in the shade. As they appeared about that time, the writer gives the heat register to show that the eggs hatch out rapidly during the very dry and extremely hot weather. The two patches were only about 4 feet in diameter when noticed. He immediately sprinkled sulphur on the seedlings, and that was the last of the red spider. To give an idea how fast the sulphur was applied, he states that ten men put it on in one day. The seed-

lings at that time were 4 feet high, the rows were 4 feet apart and there were eighteen acres.

At this time the eggs can be found on the branches of the almond and prune trees in localities where trees were affected last year, and can be seen with the naked eye. A strong lye wash applied will kill them, but what will kill the eggs will also kill all foliage the wash touches. The best plan is to notice after each hot spell in June or July, and if the foliage turns yellow in any part of the orchard, you may rest assured that you have red spider. At once apply the best French pulverized sulphur. If your trees are small and young, you can apply by hand. If large, use a 10-foot pole or longer as the case may be. Make a sack out of house linen or cheesecloth large enough to hold one-half gallon. Tie the sack on the end of the pole and you are ready for work. Early in the morning apply. One quick shake from the northwest side of the tree will be enough. One-half a teaspoonful would be enough for the largest tree.

[The amount given by "Orchardist" seems to us rather small. It could only work by the most thorough distribution. We should put on several times as much. It is not expensive, and can do no harm, and is more likely to get there if used a little more liberally.—ED.]

THE IRRIGATOR.

Pumping to Irrigate Wheat and Fruit.

Irrigation by means of the pump is now in successful operation along the Sacramento river. Last week a reporter of the *Colusa Sun* saw the pump at P. F. Dolan's place at work. They began on Tuesday before and had to learn how to handle the water properly. Mr. Dolan had flooded his land when the river was high enough to run out, but he found that an entirely different plan must be inaugurated where he had to pump it out of the river. He could not use the checks, for that method took too much water. A. J. Butler, who catches on to such things very quickly, was helping him, and they soon began to lay the field off into small squares, around which they made ditches with a road machine. Then they ran the water to the highest corner of a square and let it out over the land, watering as much as possible, and then let it out at the next place that would be likely to water more, and in this way managed to water the whole square, except occasionally a very small spot that it would not pay to work further at. But all that had to be learned. Still, in the six days they got over sixty acres. The running expense was about \$30 a day; hence the cost, aside from the plant, was about \$3 an acre—and this while being educated. After this it will not cost so much per acre. He also ran at night, and was not prepared to care for the night water, so there was an extra expense; but he wanted to cover as much land as possible, and while the land he watered at night cost him a great deal more than that watered in the day, he was satisfied.

The wheat he watered was to all intents dead. It laid over on the ground dry, and it would take a close examination to find that the middle spear had life. In a few hours there was a difference and most of the land gone over looks like there might be considerable wheat, but he expects nothing from it but hay. He will cut it for hay and then plant beets or something of the sort.

The matter of killing wheat by irrigation at this season of the year has been settled. It will not do it; even on land on which the water ran all night there was no sign of drowning out. This pump has not been running up to a maximum speed at any time. It was not expected that one threshing engine would do the work, and two were procured, but the second one has not yet been hitched on. Now, if under all these disadvantages the cost has been \$3 an acre, we may put that as a maximum. If he gets an average of only half a ton of good hay to the acre, he will be ahead on mere running expenses; but with his orchard, the fruit of which he will save for this year and set the buds for next year; with his alfalfa and at least the product of 100 acres brought up to the maximum in some kind of forage plants, it means many thousands of dollars profit to a man who has the stock Mr. Dolan owns.

Pumping in Yolo County.

H. F. Allen of Woodland, says the *Mail*, has finished the work of putting in a large pumping plant for C. S. Mering on his place near Yolo. The plant is a Byron Jackson, 8-inch, centrifugal pump, with a capacity of 120,000 gallons of water per hour, which is lifted from three 10-inch wells. It is situated near the depot at Cacheville on Mr. Mering's place.

Mr. Mering is now irrigating his clover fields, having had the plant in operation for twenty-four hours, with short intermissions to oil the machinery. His clover will soon be well moistened, and he will then irrigate his grain fields, which will only take a few days at most. He expects to make the plant pay for itself by the improvement and gain the irrigation

will make in his crops, and apparently his conclusions are well founded. The irrigation has been commenced just in time, and, if the cool weather continues, Mr. Mering will raise some fine crops. He is only one of a great many who have put in irrigation plants this year, all of whom will undoubtedly realize gains on the experiment.

How Cheaply They Pump in Fresno County.

"Several farmers along Fish slough on the West Side will make a good crop of wheat this year, notwithstanding the drought," said Marshall Lee to a reporter of the *Fresno Republican*. "There are two pumping plants at work wetting up several hundred acres of land that was planted to wheat last spring. The rains did not sprout the wheat, but wherever the land has been wet it is coming up and will make a good crop."

"Olney Whiteside and myself have a pumping plant and we are irrigating about thirty acres a day. Already 1000 acres have been flooded. Our experiment in pumping water for irrigation is a surprise. The cost of flooding an acre is not over 20 cents. This is cheaper than keeping up canals. The water is taken from Fish slough. It is elevated 7 feet and run into a ditch 18 feet wide and carrying 2 feet of water."

[This estimate is doubtless based upon the use of fuel, which costs nothing, as described in the next paragraph. It would be nearer 40 cents with purchased fuel. This cost does not include distribution of the water. It is merely cost of delivery in the main ditch.—ED. PRESS.]

"A traction engine is used to run two pumps, one having a 20-inch discharge and the other a 12-inch discharge. Five men are required to run the plant—an engineer, fireman, roustabout and two fuel-gatherers. We pay nothing for fuel, as dry manure is used in the engine. It burns readily and makes a hot fire. The farmers are glad to give us the manure in order to have their barnyards cleaned up."

"We have been irrigating for about thirty days and covered over 1000 acres with water. The water was run into checks, thereby thoroughly flooding the land. We expect a crop of about six sacks of wheat to the acre, and this will bring a fancy price for seed next fall. If we had not depended on rain, and had commenced irrigating earlier in the season, we would have doubled our crop. However, grain is coming up evenly all over the watered land and we are satisfied. I will flood about 200 acres more for a summer crop of corn."

"W. P. Bowen is also pumping water for irrigation. He has flooded about 300 acres. Next season there will be many pumping plants along Fish slough, as our experiment has demonstrated the cheapness and practicability of such a scheme."

THE FIELD.

Importance of Pure and True Products.

By ISIDOR JACOBS, at the University Farmers' Institute of the San Francisco Farmers' Club.

The importance of the agricultural interests in California is unquestioned. It is one of the main sources of wealth to the country, and upon which every business in this State, either directly or indirectly, is largely dependent. This being the case, it behooves the farming interests in the State to adopt such measures as will improve their condition.

Unfortunately, up to the time of the organization of the different farmers' institutes there seemed to be a certain apathy existing amongst those who should have been the boldest and foremost in improving their condition. This, probably, is on account of olden times, when the farming interests were more profitable than they are to-day. In these modern times different methods must be adopted, not only in the handling of the farms, but also in the distribution of the products, and it is necessary that systematic methods be secured by mutual co-operation for the interests of all.

Establishment of Reputation.—One of the most important features should be that every one should be brought to a realization and a recognition of the importance of establishing a reputation for our products. Unfortunately, much is to be desired in this direction, and our farmers, our people, our State and our nation can be held largely responsible. In this State to-day many articles are called for under a foreign designation, because the people prefer buying California products that way. In the East cheap goods are put on the market under California labels. In this State articles are sold largely which are composed of the refuse from Eastern sections and labeled with California labels. Should we allow such practices to live and injure the standing of our food products, which have so bright a future?

False Prejudice.—In southern California we find that the ostrich farms send feathers to London, have the London stamp put on them, when they are returned. It is necessary to do this before the people

will buy them. Other goods are put up in this State under foreign labels in order to sell them.

The finest jams and jellies sold in this market come from purveyors in Europe, who purchase many varieties of food in bulk here and have it sent to Europe, where they can put it up in their own packages, and it comes back after paying excessive duties and is readily salable under the foreign label, whereas nearly everything in the way of jellies under the California label of the same class of goods is composed of a vile species of adulteration.

False Labels.—Several hundreds of thousands of cases of Eastern peaches of the cheap grades are turned out every year in the East under a handsome label bearing fraudulent California names, and without going fully into the extent of this matter we can readily realize that the report of the committee in the United States Congress at the last session on the question of our financial depression was pretty nearly correct, as the following quotation will show: "Agricultural depression is still further augmented by food adulteration, which adds millions annually to the farmer's losses."

In addition to the terrible losses to the farming interests from food adulteration, the loss from false labeling is enormous, and we can readily see that it is through the work of man alone that nature's work is rendered ineffective.

It would be useless for me to go through the list and enumerate the enormous injury done to the olive industry, fruit industry and innumerable other branches of our farming interests, as the matter has been gone over quite frequently.

Much has been attempted in this State in the past few years, and while what has been accomplished has done much good, yet there is much to be desired, for spasmodic agitation regarding this matter will not prove sufficient.

The question must be handled on broad lines, and in the most systematic manner, and no man or set of men can carry on this agitation to a successful issue, for this means that spasmodically the subject is taken up only to be dropped in a short time, and the good accomplished dies out.

The Government Abetting Fraud.—It would seem, of course, that State and national legislation on the subject of false labeling, as between the States, and the question of adulteration of products could accomplish the object proposed, but you will all remember that the Government assisted in the shipment from this State last year of a large quantity of liquor branded "Pure (California) Grape Brandy," made up of nine-tenths of material brought from the East. Yet it bore the name California, and the last few days the United States government has promulgated instructions to all revenue agents throughout the country that the formulae of all goods filed must be kept secret; but they have not said that they will co-operate with the State officials in preventing fraud, deceit and imposition. Under these circumstances, is it any wonder that our agricultural interests languish?

Pure Food Questions.—Thousands of tons of fruit could be used in this State in the manufacture of pure jellies, jams and preserves; yet carload after carload of adulterated stuff is brought in from the East and placed on the market and sold as California fruit jellies. It can also be readily stated that the influences at work to prevent national and State legislation on this important subject are enormous. The profit from the illicit traffic is so great that the men engaged in the fraudulent work are able to a certain extent to prevent legislation which might improve the situation.

Need of United Action.—I can speak from experience that nearly every man taking part in an agitation of this kind to prevent fraudulent practices makes so many enemies amongst the mercantile classes that he is forced to desist. A success in agitation, even to a marked degree, cannot be achieved until the people throughout the State, and the press, are willing to join in this important subject and keep it up until the effect is felt. Therefore State and national laws are necessary to protect our State from fraud, to protect our people from being imposed upon, and to protect our farmers, so that they may reap the just reward of their toil.

This, to my mind, is of more importance to the farming interests of this State than all the protection afforded by tariff bills, and I personally believe that with this protection and free trade, whereby the farmers could sell their products in all the markets of the world, a different era would open for the farming interests of our State.

What the Name California Should Mean.—California should be known as that part of the earth which produces the greatest variety and the largest quantity of luxuries and food products. Let us remember as producers of the greatest variety of food products raised in any part of the world that in our commercial relations there are enough people who demand these products, provided they can be satisfied that they are getting the full value of their money.

The name "California" stamped upon a package should be a guarantee that the contents are as represented, and the markets of the world must be

made to acknowledge this fact. If there is any country whose products in their purity can afford to challenge those of the world it should be California. All adulteration of food is at the first expense of those who produce the raw material, and are engaged in staple agriculture.

Education Essential.—The farmers need to take this matter home to themselves, and with this, as well as the studying of better methods of handling their products, so that they may reach as closely as possible to the consumer, they will find that they have improved their condition in this regard.

The real source, however, to accomplish the end proposed is to get national and State legislation and systematic education, which I am pleased to say the farmers' institute, under the auspices of the University of California, is trying to bring about: Education of the farmers, education of the people, education of the consumers, education through the medium of the public schools and through the medium of our universities. Every citizen who has the welfare of our State at heart should look to it that they materially assist the farming interests, which are largely the source of our wealth and prosperity. State pride is necessary to the assistance and future prosperity of this work, as well as that of our universities.

The Future.—I believe that in the near future the University of California, with the new era which has now been started under the present board of regents, with completely equipped laboratories, and with a complete force, will spread education on this subject throughout the State, through the medium of the farmers' institute, and that our inhabitants will come to know the importance of fostering our industries and giving a reputation to everything bearing the name "California" which will be synonymous with purity and prosperity. Then will our agricultural interests be what they should be, and our State truly prosperous and, as was said of England, "the land dear for her reputation throughout the world."

THE VETERINARIAN.

Dr. Creely's Advice to Enquirers.

For Kidney Trouble in a Mare.

TO THE EDITOR:—Will you please have Dr. Creely tell me what to do for a seven-year-old mare that seems to have kidney trouble? She urinates frequently; urine sometimes a thick, dark-colored liquid. The mare eats greedily, is quite thin and gives out when worked. At the present price of horses, one might say that the best treatment was a shotgun, but the animal is an exceptionally good one when in health. Newhall. Wm. G. HEWES.

Take a handful of whole flaxseed, boil in two quarts of water until it has the consistency of mucilage. Don't strain. Add to this one-half a tablespoonful of tincture of buchu leaves. Continue this treatment daily, and in twelve to fifteen days the mare should show great improvement or be much worse. Don't use saltpeter, rosin, sweet spirits of niter, or in fact any other drug while treating the way I advise. The following liniment rubbed over kidneys once or twice a week will help: Olive oil, 8 ozs.; turpentine, 2 ozs.; spirits camphor, 3 ozs.; water ammonia, 1 oz. Mix. Over this a hot sack of bran will help.

Canine Chorea.

TO THE EDITOR:—We have a Scotch collie that is troubled with some nervous disease. He twitches all the time, his limbs are never still, and when lying down he has spasms—about a dozen in a night. He is about three years old and has had this trouble ever since we got him, two years ago. In every other way he seems to be perfectly healthy. Orinda. SUBSCRIBER.

This is a nervous disease known as chorea or St. Vitus' dance; it results from or is a complication of some debilitating disease. Nature affects a cure in time and they outgrow the disease. We assist Nature by the following treatment: Crude cod liver oil, a teaspoonful daily; plenty of good nutritive food (soups, broths, cooked meats); plenty of exercise and fresh air, cold sponging, etc., and the following prescription: Tincture chloride iron, 1 drachm; nitrate silver, 4 scruple; sulphate zinc, 2 grains; simple syrup, 2 ounces; water, 8 ounces. Mix and give two teaspoonfuls daily.

It will be months before the dog is cured. The case can be greatly helped by giving one dose 15 grains of powdered areca nut on an empty stomach.

For a Shropshire Buck.

TO THE EDITOR:—I have a thoroughbred Shropshire buck, with a constant discharge from the nostrils, a slight froth around the mouth, and a general sluggishness apparent. He breathes with difficulty, and a constant snuffing. His appetite seems to be fair, but he has nevertheless fallen off rapidly in flesh since his trouble began. If Dr. Creely or anyone can suggest a cure, it will be gratefully received. Davisville. G. K. SWINGLE.

Put him in a close room, get a bottle of cresoline and a lamp and allow him to inhale the fumes several times daily for an hour at a time. Give 2 ounces of cod liver oil (crude) and the following prescription: Tincture chloride of iron, 2 drachms; glycerine, 2 ounces; saturated solution potash, 1 pint. Spray into mouth or throat a tablespoonful three times daily. After a week advise me as to condition.—DR. CREELY.

Probably Dry Gangrene.

TO THE EDITOR:—I send you to-day for Dr. Creely, in sealed box, several bones taken from a beef which was just killed.

You will notice that the bone is diseased. I send you the bones and ask your opinion as to the disease. The bone was first noticed to be diseased in cattle about six weeks ago, and since that time all that have been killed have shown the disease in a marked degree. The cattle in the herd from which they were taken are all very fat and to all appearances healthy. None have died as yet, but as soon as they are killed the bone smells and the meat does not keep well. I have had a veterinary surgeon here, but he said he had never seen anything like it. Any charges will be cheerfully paid.

Independence. ARTHUR ROBINSON.
I have made a very careful study and research and from the specimens sent me the case is easily diagnosed. It is the beginning of a condition known as dry gangrene, a condition superinduced by permitting the cattle to feed on moldy, musty or ergotized food. To complete my diagnosis, it would be well to find out whether or not they have had diarrhoea and constant thirst. Please advise me on this point.

DR. E. J. CREELY.

510 Golden Gate Avenue, S. F.

AGRICULTURAL REVIEW.

CALIFORNIA.

Colusa.

SOME WHEAT.—*Sun*, May 14: Land on which five or six sacks were expected is now estimated as high as ten and even fifteen sacks. The low lands of district 108 is turning out splendidly, and some of it is estimated as high as twenty sacks to the acre and thousands of acres at high as fifteen sacks. John Campbell, it is said, has ordered thirty thousand sacks for his Glide land near Maxwell, and Mrs. Houx, just south of him, will have some 1700 acres that will make from ten to fifteen sacks. Geo. Abel told us a few weeks ago that he would have some that would go five or six sacks, and now he expects fifteen. Wherever there was anything left three weeks ago to improve on there has been this same marked improvement.

Fresno.

FAVORING STATE CONTROL OF WATER.—*Reedley Exponent*, May 12: Henry Miller controls all the water of the San Joaquin river to the grave danger and public detriment to the land above him. If the Bank of California should attempt to put in a pumping plant on the bank of the river and pump water to irrigate their thousands of acres of land, thus lowering the water in the river, Miller would at once request and secure an injunction preventing the Bank from pumping that water. This is clearly against the public weal of the State, and such a state of things should not be allowed to exist. We believe, and have good reasons for so believing, that the Bank of California would forfeit all their rights in the Fresno Canal & Irrigation Co. if they could be allowed to put in a pumping plant on their lands near the San Joaquin river. Hence the conditions which exist to-day on this and Kings river seem to us the best possible argument in favor of State control.

MORE BLASTOPHAGAS.—*Republican*, May 13: This week Geo. C. Roeding received a consignment of Capri figs containing blastophaga, or fig wasps, sent out by the Agricultural Department. The Capri or wild figs are direct from Naples and each of the figs contained a number of the wasps. The insects are small, being about the size of a gnat. Many of them were dead when they arrived here, but Mr. Roeding hopes that the remaining ones will multiply and thrive in this valley, as their introduction will mean much to the San Joaquin fig growers. The wasps are essential to the successful growing of Smyrna figs and occupy a peculiar field in the workings of nature. Heretofore efforts to introduce this insect into California have been unsuccessful, although several experiments have been made. Mr. Roeding has placed the Capri figs under some of his own trees and is using every device to entice the insects from their homes into new quarters in his growing figs.

Humboldt.

BUTTER SHIPMENTS.—*Eureka Standard*, May 12: The butter shipments from Humboldt last month showed a most surprising increase over those of the previous months of the year, being nearly three times greater than those for the preceding month, while a comparison with those for January and February make them appear insignificant. For the year so far the shipments have amounted to 618,465 pounds, divided as follows: January 98,300 pounds, February 66,100 pounds, March 132,970 pounds and April 321,095 pounds. Other dairy products show a corresponding increase, there having been 575 cases of condensed milk and 395 dressed veal shipped. Potato shipments, too, were large in April, being 4891 sacks, as against 10,289 during the three previous months of the year.

Kings.

THE HORN FLY.—*Hanford Journal*, May 13: The Texas horn fly has made its appearance in Kings county and is a terrible pest to the cattle, and especially to milch cows. "This fly," says Mr. Motheral, "is about one-half the size of the common house fly and is a terrible nuisance. They keep the cattle poor and are sometimes so bad on cows as to cause quite a falling off in the milk. They usually fasten themselves on the hocks of the cattle, or wherever the animal has the least chance of rubbing them off. The best thing to do is, before the cows are turned out in the morning after milking, take a sponge saturated with linseed oil and rub over the parts most likely to be bothered. This is often quite effectual."

Lassen.

THE MOUNTAIN FRUIT.—*Susanville Mail*, May 13: Every indication now appears favorable for a large fruit crop, and it will be worth something this fall. There will be a great scarcity of fruit in the lower valleys, hence the market at fair figures for the crop raised in the mountains.

Los Angeles.

RABBIT SHOOTING.—*Pomona Progress*, May 12: The rabbit drive at the Loud ranch yesterday was a grand success, the eleven marksmen making a score never equaled in Pomona valley. There were 360 rabbits shot—an average of thirty-three each.

Mendocino.

A RAILROAD FISH HATCHERY.—*Winters Express*, May 13: A unique enterprise originating with Pres. Foster of the San Francisco & North Pacific Coast Railway is the establishment at Ukiah of a fish hatchery. The company's fish hatchery will turn out about 2,000,000 eggs this season and the spawn will be turned loose in the streams along its route. The hatchery is in Gibson canyon within twenty minutes' walk from the courthouse in Ukiah, and a broad avenue has been opened to it from the town, great interest being manifested in the enterprise. With the streams of that region alive with fish to add to its many varied attractions as a field for outings, there will be nothing lacking to attract both the sportsmen and the seeker for health.

Merced.

SWEET POTATOES.—*Atwater Cor. Sun*, May 13: Notwithstanding the cinching that the sweet potato raisers got last year, there will be a large amount planted in sweets again this year.

RYE HAY.—John Swan is cutting a good deal of his rye for

hay, using an 18-foot header for that purpose. The rye is short and small and should make an excellent quality of rye hay. But I do not mean to brag about it and imply that it is anything fine at its best.

Napa.

A LARGE SOWING OF AUSTRALIAN RYE GRASS.—*Napa Register* interview with Cy Mulkey: "Two years ago, having satisfied myself as to the merits of the grass, I sowed it on forty acres of the Spreckels ranch. This spring I sowed forty more sacks, bringing the area in this grass up to 110 acres. Here is a pasture which formerly was a mass of mustard and tar weed. You see that the rye grass has driven out the weeds and in fact exterminated all other plant growth. You see what a bright green it is. Well, it keeps that color all through the year. The roots are so thick and far-reaching that they search out and hold moisture during the summer. Stock of all kinds feed greedily upon it. It's a tip-top butter maker and flesh former. It seems to do best where it is closest fed. It constantly sends up tender, juicy sprouts, if not permitted to go to seed. On high, dry lands it thrives. See how nicely it is growing over on the hill pasture. The ground must be plowed, of course, before sowing, and after once started it gains ground. A good stand can be obtained in a year or two."

San Bernardino.

SHORT HAY.—*Chino Champion*, May 13: We notice a number of mowers at work in the barley fields fitted with platforms or aprons to catch and bunch the shorthay that is being cut. By this means hay enough will be cut from many fields to more than pay for the cutting, whereas it could not be gathered at all with a rake.

San Diego.

APPLES.—Chester Gunn of Julian in *San Diego Union*: "The prospect is good for a bigger crop of apples than last year. We have had good steady rains, and the plowed ground is so wet that I sink in to my boot-tops. We will have lots of hay, good feed, and a big fruit crop."

LEMON SALES.—G. P. Hall in *Union*: "Good, firm-keeping lemons, regular sizes, will, at the present market prices, net the grower shipping through the Exchange from $\frac{3}{4}$ to 1 cent for choice and 1 to 1 $\frac{1}{4}$ cent for fancy, this for fruit cut from six to eight weeks ago, which could not have been sold at the time that it was cut for over $\frac{1}{2}$ cent, if at all. An advance of 85 cents per box in the markets over the present freight rates would double the above net returns to growers in the Exchange, giving them a round 2 cents for the fruit. Such an advance is quite possible before the green fruit now being clipped and selling at $\frac{3}{4}$ cent, top price at this time, is ready for market. Watch the markets, and if such a raise comes see if you can sell your fruit at 2 cents; see whether every raise of 85 cents per box that may come through the summer, increases the local price of your fruit 1 cent per pound."

BEE PASTURE.—*Ramona Sentinel*, May 12: Measurement of the rain gauge for April 29th and 30th and May 1st showed 3.10. Chowning had 2.50, Cameron 1.75 and Potrero 1.25. It was a godsend to our county and makes sure feed and hay crops in this section. The bee feed, which hee men had given up, is now regarded as assuring lots of honey. The white croffoot is all over the foothills in a sheet of white bloom, and is one of the best honey producers. The white sage, which produces the highest priced and most favored honey in the world, is sending out its long flowering stalks, getting ready to put out bloom. Before the last rain it did not seem to mean to do much toward blooming. The laurestina is a mass of bloom, and so is the buckbrush one mass of lilac from the foot to the top of the ridges, at 5500 feet changing to snow white. In a month from now it will be a white sheet all over our higher mountains. The oaks exude a honey dew at their blooming time and a second crop when the acorns are forming, which makes lots of honey. If no drying winds come—and of that there is little danger—bee men, hay men and cattle men will have a prosperous year.

PANNING OUT GRAIN.—*San Marcos Cor. Escondido Advance*: Farmers are arranging a pan on their mowers in order to get the short grain. Our new blacksmith is kept busy getting the mowers ready for use.

San Joaquin.

CORN PLANTING.—*Stockton Mail*, May 13: There will be considerable corn raised in California this year. Already corn is being planted on the low lands and the islands, where the irrigation for a wheat crop was not the success that was expected of it.

WHEAT ESTIMATES.—"I am willing to go upon record as saying that there will not be more than 150,000 tons of wheat harvested in California in 1898," remarked M. P. Stein to a *Mail* reporter this morning, "and the average California wheat crop is between 750,000 and 800,000." Captain J. W. Smith says there will not be more than one-twentieth of a crop in San Joaquin county, and that that is a conservative estimate.

THE SWALLOWS.—"I see that the swallows are coming in," remarked J. A. Sanford to-day, "and am sorry to notice that the boys are killing and trapping them. If the swallows will only remain here they will drive out the sparrows, of which they are the natural enemy. The sparrows have done more damage to gardens this year than they ever did before, and many people have resorted to the practice of poisoning them. But the swallows, if not driven away, will do more good towards getting rid of the sparrows than all the efforts that men can make. The swallow is not a vermin carrier, as many suppose, but is a cleanly bird, and is not a fruit eater, either."

THE RAIN AND A DAM.—*Lodi*, May 16: The heavy rainfall has played havoc with the big dam across the Mokelumne river at Woodbridge. The course of the river has been changed and washed out the new channel, leaving the Woodbridge canal dry. The contractors are in despair, and interested parties say the only way to remedy the difficulty will be to construct a new dam at some point where good clay banks can retain the water.

San Luis Obispo.

CATTLE SHIPMENTS.—*Breeze*, May 12: On Friday or Saturday Mr. J. F. Ingram will leave San Luis Obispo with a train of about twenty-seven carloads of mixed steers and cows. He has gathered twenty-four carloads from Los Alamos and Guadalupe. Three carloads will be added to the train at San Luis Obispo, and probably some more will be taken on at Salinas. Mr. Ingram has purchased these cattle for Jesse D. Carr, and they will be shipped to the great Carr ranch in Modoc county. On Sunday Mr. L. Gerber of Sacramento will ship twenty-one carloads of mixed cattle from this point. He takes his stock into Oregon, where he has obtained pasture lands. Mr. Charles King of Hanford left this city this morning for Cayucos, accompanied by some vaqueros. Mr. King and his men go up the coast to collect a bunch of about 500 cattle which have been purchased from Messrs. Donati, Laloli and others. The cattle will be driven to Hanford by way of Cholame and Dudley. A short time since Mr. King took a very large herd from Cholame to pasture lands near Hanford.

Solano.

LARGE CHERRY SALE.—*Vacaville Reporter*, May 14: The cherry crop of between 8,000 and 10,000 boxes on the W. W. Smith ranch has been sold to Porter Brothers Company for 75 cents a box net f. o. b.

STOCK ON THE TULE.—*Suisun Republican*, May 13: Feed on the tule lands was never better at this season of the year than at present, the flood tides of last week having come in the right time to do a vast amount of good. Solano county

seems to be the Mecca for stockmen, many thousands of cattle having been shipped here from other counties to be pastured during the remainder of the year. Local buyers have also purchased much outside stock and will do well.

Santa Barbara.

THE BEAN MEN.—*Press*, May 12: The bean growers are most philosophical in the acceptance of the inevitable. Many of them have last year's crop still on hand; owing to the low prices prevailing after the "trust" was broken, they preferred to hold on rather than sacrifice. Beans are now worth twice as much as they were last year, and will probably go higher; so these lucky farmers send their cattle off to pasture, sell their beans for a small fortune, and spend the summer reading experiment station bulletins and the like.

Santa Clara.

ARIZONA HAY.—*San Jose Herald*, May 14th: The Farmers' Club is holding a largely attended meeting this afternoon. The secretary read letters from the Southern Pacific Company offering to bring alfalfa hay to San Jose from Arizona common points at \$8 a ton in carload lots. Hay there is put on board cars at \$7.50 a ton. There was considerable discussion of this hay question and it is likely many carloads will be brought in.

Santa Cruz.

THE MOUNTAINS PROSPEROUS.—TO THE EDITOR:—Rain has come late this year, but is acceptable here to insure the maturity of hay, grapes and fruit. It was not needed, however, as we had plenty of rain—22 inches—which assured large crops. Prospects were never better. This rain yields up to noon of May 16th two inches. Rain is beneficial, as no hay or cherries are far enough along to injure. I have twenty acres of hay that will average two tons per acre. I have the largest prune crop per tree in the State, I believe, unless Visalia can beat it.—W. H. AIKEN, Wrights.

Sonoma.

A MIXED FARM.—*Farmer*, May 13: Mr. H. H. Hammell of Two Rock is rejoicing in the finest prospect for a crop he has ever had. Sixty acres of old and young cherry trees will yield fully thirty tons, principally Royal Annes. There are five acres each of Rockports and Black Tartarians; apricots 100 trees and 200 peaches of various varieties will need thinning; apples 200 trees all right now. He has 120 acres, some of which will cut four tons of hay to the acre without any more rain. About one-half will be cut for grain. Mr. Hammell is milking thirty-five cows and has a fine young herd of Jersey grades. He believes in dehorning stock and would not run a dairy without the silo. Last year he built two silos and kept up the flow of milk ten months with an average test of 4.2. In addition to corn for ensilage, 100 tons of beets will be raised for feed.

ENSILAGE MILK.—T. G. King owns the creamery plant at the old Denman place, and under the firm name of "Edenoco Creamery" handles 14,000 pounds of milk daily from twenty-nine patrons, making about 700 pounds of gilt-edged butter. Although over two-fifths of this milk came from cows fed on ensilage in the month of February, there has never been any kick made. Indeed, the men who have silos make it their business to feed a well-balanced ration, and any change shown by the daily test of the milk is quickly looked into. They have found that guess work does not pay. Mr. King prefers to have his cows calve in March. He can handle considerably more milk at about the same expense and is thinking of building two silos this season.

GOOD WORK FOR ROAD SPRINKLING.—*Republican*, May 9: Sprinkling county roads has met with general approval from the citizens and taxpayers of Sonoma county, and the supervisors have empowered the road commissioners to purchase the following apparatus and materials: Supervisor Putnam: Thirteen tanks, thirteen windmills and two sprinkling wagons. Supervisor Hayden: Three tanks, one windmill and two sprinkling wagons. Supervisor Austin: Six tanks, six windmills and two sprinkling wagons. Supervisor Gray: Eight tanks, five windmills and one sprinkling wagon. The motion was unanimously passed and provides for the purchase of the necessary pipe and fittings for the tanks and windmills.

NEW GRAPE CRUSHER.—*Healdsburg Tribune*: W. H. Priest is building a grape crusher for Scatina at his Healdsburg foundry, which is an improvement on anything in that line now in use, it is believed. It has fluted rollers, 10x26 inches in size, with expansion gear, giving a spread of 3 inches if required. The stemmer is an improvement over the old one in that the teeth run clear through the shaft and are fastened with nuts on the other side. The present style of teeth screw in half way through the shaft and meet in the center. They continually work loose and cause endless annoyance and trouble. Mr. Priest manufactured two stemmers of this new pattern for Simi last year and they gave the best of satisfaction. The crusher is made of iron throughout.

Stanislaus.

COYOTES.—*Herald*, May 12: Since the county ordinance offering a bounty of \$2.50 on each coyote scalp went into effect, on Jan. 28th last, no less than 355 such scalps have been presented at the courthouse and paid for, the bounty aggregating \$887.50. At the February session of the Board but seven scalps were offered for bounty, at the March session 119 were presented, 109 at the April session and 120 at the May (this week) session. The professional hunters bring in from six to fifteen monthly, and some of the hunters, adepts at tanning, realize 75 cents each for the hides.

Tulare.

THE ACORN CROP.—*Times*, May 12: Our stockmen will certainly remember that it was the enormous acorn crop that saved their cattle in 1864. All the oak trees that I have examined are thickly set with acorns. With a plentiful acorn crop the stock of this county will pull through the season.

PORTERVILLE FRUIT.—During the past two or three days buyers have been here from Visalia and Los Angeles, sizing up the peach crop. An abundant yield is now assured. In some orchards thinning will have to be done. Apricots, prunes and prunus simoni will average about half a crop along the foothills.

Yuba.

THE HOPS.—*Wheatland Four-Corners*, May 14: On the river the hops are shooting right ahead. In most forward yards the vines have almost reached to top wire and are making arms rapidly. On the few scattering early varieties new hops already formed may be found. From present indications, picking will commence early this season.

ARIZONA.

PINE FORESTS.—*Phoenix Herald*, May 12: It is a fact not generally known, but it is a fact nevertheless, that Arizona contains the largest pine forests in the world—that is, the largest unbroken forest of pine. The forest referred to touches the railroad near Flagstaff and stretches for 170 miles southeast into New Mexico, having an average width of forty miles. Five different companies are now engaged in getting lumber from this forest.

RABBIT DRIVING.—The more prosperous of the farmers have enclosed their respective properties with rabbit-proof fences, which have a tendency to divert the ravages of the pests to the unprotected cultivated plots. The plan of a big rabbit drive is now being formulated by the farmers on that portion of the Agua Fria. It is the intention to extend an invitation to the Indians from the reservation near by to join in the sport with the assurance of all the spoils of the chase, which can be conveniently converted into jerky for winter sustenance. The cold water farmer estimates that one jackrabbit will destroy \$1.50 worth of unprotected crop in a season.

THE HOME CIRCLE.

The Laureate to America.

What is the voice I hear
On the wind of the Western Sea?
Sentinel, listen from out Cape Clear,
And say what the voice may be.
" 'Tis a proud, free people calling loud to a
people proud and free.
"And it says to them, 'Kinsmen, hail!
We severed have been too long;
Now let us have done with a wornout tale,
The tale of an ancient wrong,
And our friendship last long as love doth last,
and be stronger than death is strong."
Answer them, sons of the self-same race,
And blood of the self-same clan,
Let us speak with each other, face to face,
And answer as man to man,
And loyally love and trust each other as none
but free men can.
Now fling them out to the breeze,
Shamrock, thistle and rose,
And the star-spangled banner unfurl with
these,
A message to friends and foes,
Wherever the sails of peace are seen and
wherever the war wind blows.
A message to bond and thrall to wake,
For wherever we come, we twain,
The throne of the tyrant shall rock and quake
And his menace be void and vain.
For you are lords of a strong young land and
we are the lords of the main.
Yes, this is the voice of the bluff March gale,
"We severed have been too long;
But now we have done with a wornout tale,
The tale of an ancient wrong,
And our friendship last long as love doth last,
and be stronger than death is strong."
—Alfred Austin.

Passing the Love of Women.

"You sent for me, mother?"
"Yes, child; I sent for you to say good-by. I am going away for some time." The woman spoke deliberately, in the monotonous voice of one giving a piece of information tedious to give.
Angus did not express any surprise, or regret. The nine years he had spent with his mother had not helped him to know her. Without in the least understanding wherein lay her strange aloofness, he was conscious that he was extremely uninteresting to her. He wondered why it should be so, and his honest, boyish soul was sometimes troubled. But children submit readily to the inevitable. Angus had his compensations.
Vera Warden looked at her son with more interest than was usual with her. He was certainly a handsome lad, tall and well built, with blue eyes that were both kind and honest. She had been long in making her decision. Now that it was made, she did not regret; she only wondered if, somehow, she had missed something that more commonplace women find easily.
"Angus, dear, you must take care of father. You and your father are so much alike—understand each other so well—that it will be easy for you. You must be especially good to him now."
There was a curious little catch in Vera's voice as she said the "now."
"Why are you going, mother?" questioned Angus, feeling that there was something even more puzzling than usual in his mother's manner. "When are you coming back? Father will miss you."
"Will he?" asked Vera, wistfully.
"And you, Angus, will you miss me at all?"
Angus was profoundly astonished. He would like to have kissed his mother just as he kissed dad, but he did not dare. He only grew red, and fidgeted awkwardly, as he answered: "Of course, I shall miss you, mother—at meals."
It was not greed that prompted the child's definition, but the fact that he seldom saw his mother, except at breakfast and at lunch.
Vera Warden did not care for children, and said so—frequently.
The carriage came to the door, good-by being said without much emotion on either side. As she was driven out of the big stone gates, Vera gave herself a little shake, saying: "And now for life!"
An hour later Thomas Warden returned from a fishing expedition on the other side of the Dale. The oak trees

in the avenue had burst into golden-green leaf. The big chestnut on the lawn—the only chestnut on the estate—was covered with cones of pinky blossoms. The May sunset touched the grim gray house with rosy light, and Thomas Warden felt a welcome in it all.

Laying down his rods and fishing baskets in the hall, he went straight to his study. There on his blotting book lay the letter he had both dreaded and expected.

His sunburned face looked gray as he took it up. He sat down heavily; then, with shaking hands, opened the letter and read:

"I have burned my boats; there is no going back. I warned you that it would come to this; that I would bear the monotony no longer. I have given you ten years of my life—the ten best years. Now I owe it to myself to live—it may be ten years more,—but, anyway, to live. Marriage and maternity have for me proved uninteresting, but I have endured them for your sake, and for the sake of the boy—while he was quite young. Had he been in any way an unusual boy I might have found life more tolerable. To develop his mind would have been an interest for me; he might have shared, in some degree, my aspirations after a fuller intellectual life. But he is a healthy, handsome, quite commonplace boy, who will grow into what you would call 'an honest, God-fearing man' without my help. He has an excellent governess, and your good mother will doubtless come frequently to worship you both. I wish I could free you of me altogether, and that you could marry again and be happy. But you are not the sort of man to bear with equanimity any sort of scandal or publicity, and you have my promise that the life that I lead shall be such as can give you no cause for offense other than the fact that I lead it away from you. For your never-failing courtesy and kindness I thank you. Believe me, I shall always have the sincerest affection and respect for you. The fact remains, however, that I cannot lead your life, and you can lead no other. Let us then separate, and go our different ways in peace.
"In every conventional and actual sense, I am and will be your faithful wife,
VERA WARDEN."

There was nothing in the letter that she had not said to him many times during the last six months.

Now she had actually carried out her so often announced intention, and was gone; and the realization stunned him. He felt cold and numb. The roar of the beck, in which he had stood all morning, was in his ears, and he gazed out into the gathering twilight, seeing nothing,—only conscious that it was dark and chill everywhere.

There was a knock at the door, and a servant came in, saying: "Please, sir, Master Angus is ready, and would like you to come to him, if you are not too tired."

Dragging himself out of his chair, he passed his hand across his dazed, strained eyes. Then he went out of the room, and up the wide old staircase to his dressing room, where Angus slept.

"I've got a new night suit, dad, just like yours. Look—pocket and trowies, and all," exclaimed the child, displaying the latter garments with great pride. "Miss Taylor had them made for me in York. Aren't they nice?"

"Yes, my boy, yes—very!" but the voice was absent, and Angus felt that there was something lacking, something that he generally found there.

The child felt frightened. Was dad, too, going to hold himself "aloof"? Would he, too, take to looking over people's heads and answering in a far-away voice? The thought was one full of omen.

Angus gazed into his father's face, as he sat wearily on the edge of the little bed. The child, if commonplace, was quick to understand those who loved him. In a moment he acquitted his father and came and knelt beside him, rubbing his curly head against his knees. He said his prayer with devoutly folded hands, as Grannie had taught him. Then, climbing into War-

den's arms, he put his own round his neck.

"Shall I sing my psalm, dad? Or are you too tired?"

His father held him very close. "Sing it laddie. Sing Grannie's psalm."

Grannie was Scotch. When she came she taught Angus the psalms in metre. She taught him other things that he learned more easily than the psalms; chief among them a great love and trust in her, and through her, for everything Scotch.

Shortbread was Scotch, and it was good. Scones were Scotch, and they were good, especially with currants. Edinburgh rock was excellent; therefore the psalms, too, were probably superior in the Scotch version. Angus learned all Grannie's favorites, the first of which was the twenty-third—

My table thou has furnished,
In presence of my foes.

The child always pictured a long table, covered with a fair white cloth, and plentifully plished with plates piled high with scones and shortbread. He wondered what "foes" were, for he hadn't any; he thought they must be the servants who handed round the plates.

"Goodness and mercy all my life aball surely follow me." The sad, patient tune Grannie had taught him sounded almost triumphant, as the child's strong treble voice rang out. When he had finished his father leaned his head against the little rounded shoulder, and there was silence save for the man's quick breathing.

"Good night, dad!" said Angus at last, turning himself to see his father's face.

Thomas Warden rose hastily; he laid the boy in his little white bed, kissed him and blessed him, and went down and sat in the study again. But a man cannot dine in his fishing boots, so he went upstairs, had a bath, and while he dressed Angus discoursed cheerfully to him through the half-open door.

The silence was unbearable; it was so lonely. Thomas Warden could not sleep. He got up and walked about his room. Only one o'clock! The night had hardly begun.

The moon shone brilliantly, but the wind blew shrewdly through the open casement. May nights are cold in the North country.

He went into the dressing room and looked at Angus. "If she had only loved the boy—if she had only loved the boy." He could have forgiven her all the rest. A just and tolerant man, he knew his own limitations. He granted to the full his wife's intellectual superiority; but she might have loved the boy.

"Goodness and mercy all my life shall surely follow me." Why did those lines ring in his head? and then, there always followed the sentence in his

wife's letter—"I cannot live your life, and you can live no other."

It was true; he could live no other. But the boy—why did she not love the boy?

He drew up the blind and the mellow moonlight fell on the sleeping child. Surely he was a goodly child, so comely, and kindly, and honest. As he looked at the boy his heart went out to him. He did not stoop and kiss him as a woman would have done; he revered too much this fair sleep which wrapped him round. He went back to his own room and got a pillow. Then, laying his long length on the floor beside the little bed, and with the child's psalm still sounding in his ears, he, too, slept.

The room was flooded with moonlight when Angus awoke. There was a sound of regular and heavy breathing. Angus felt puzzled—puzzled, but not in the least afraid. Such breathing must come from a man, or a dog; from men and dogs the child had experienced nothing but kindness. He sat up, and, listening, looked about to see where the sound came from. He shook his hair back from his forehead and rubbed his eyes. Yes; he was not mistaken, it was his father who lay there, on the floor, beside his bed.

Angus rose softly and touched his father's bare feet; they were very cold. "Poor dad," he said to himself, "and him so tired!"

Then suddenly he remembered his mother's words: "You must take care of father." It was bad to sleep without a covering. Grannie had told him that. He pulled his little quilt off his bed, and laid it lightly on his father. To his delight the sleeping figure never stirred, but the quilt was short, and Thomas Warden was long. By no amount of stretching would it cover both his shoulders and his feet—poor, cold feet. Then Angus was seized by an inspiration, which even his mother could not have called quite commonplace. He lay down at his father's feet, and, unbuttoning the jacket of the new sleeping suit, cuddled, up, so that the cold feet rested on his own warm breast. Then, he, too, fell asleep.

The kindly moon shone in upon them, and it was very still.

When Thomas Warden awoke the moonlight had changed to pearly dawn. He was no longer cold, and when he realized why, was no longer lonely.

A man's tears are complex things.—London Outlook.

THE leaves of house plants should be kept as free from dust as is the bric-a-brac of the room. Persons do not seem to understand that this advice applies to all plants, as well as to the palm and rubber plants that are usually looked after. Air is absorbed by plants through their leaves, a process that is naturally interfered with when these are laden with dust.

A FRIEND'S ADVICE.

And what it led to.

It is not a common occurrence that a friendly word should be the means of giving nearly forty years of happiness and health to the person heeding the advice it carried. This was the case with Mary Lingard. At twenty-five she was dragging out her days in misery. At sixty-one she finds herself so active and strong she can do work that would shame many a younger woman, and looks back on thirty-six happy, healthful years of industry. But let her tell her story:

"Thirty-six years ago I had great trouble with my liver. The doctors allowed that there were tumors growing on it, and they blistered my side in an effort to give me relief. I was at that time earning my living as a tailoress, but for five years, between the pain in my side and the blisters I was in constant misery, and work was a drag to me, with no prospect of relief; fortunately for me, however, a friend advised me to take Dr. Ayer's Sarsaparilla, and finally persuaded me to take a regular course of it. When I first commenced taking the Sarsaparilla my side was so painful that I could not fasten my dress, and for a time I did not get any relief, but my friend advised me to persevere, and relief was sure to come, and come it did. This happened, as I say, thirty-six years ago. My liver has never troubled me since, and during these years I have passed through the most critical period of a woman's life without any particular trouble, and to-day, at sixty-one years of age, I am active and strong, and able to do a day's work that would upset

many a younger woman. Ever since my recovery I have taken a couple of bottles of Dr. Ayer's Sarsaparilla each spring, and am quite satisfied that I owe my good health to this treatment. I give this testimonial purely in the hope that it may meet the eye of some poor sufferer."

MARY LINGARD, Woodstock, Ont.

Dr. Ayer's Sarsaparilla has won its way to every corner of the world by the praise of its friends; those who have tried it and who know they were cured by the use of the remedy. There is nothing so strong as this personal testimony. It throws all theories and fancies to the winds and stands solidly upon the rock of experience, challenging every skeptic with a positive "I know." Ayer's Sarsaparilla with its purifying and vitalizing action on the blood is a radical remedy for every form of disease that begins in tainted or impure blood. Hence tumors, sores, ulcers, boils, eruptions and similar diseases yield promptly to this medicine. Some cases are more stubborn than others, but persistence with Dr. Ayer's Sarsaparilla usually results in a complete cure. Mary Lingard began with a bottle, and went on to a course of Dr. Ayer's Sarsaparilla. When she was cured she realized that a medicine that could cure disease could also prevent it. So she took a couple of bottles each spring and kept in perfect health. There are thousands of similar cases on record. Some of these are gathered into Dr. Ayer's Curebook, a little book of 100 pages which is sent free by the J. C. Ayer Co., Lowell, Mass. Write for it.

The Summons of the Drum.

Hark, I hear the tramp of thousands,
And of armed men the hum;
Ho! a nation's hosts have gathered
Round the quick, alarming drum—
Saying "Come,
Freemen, Come!
Ere your heritage be wasted," said the
quick, alarming drum.

"But when won the coming battle,
What of profit springs therefrom?
What if conquest, subjugation,
Even greater ills become?"
But the drum
Answered: "Come!
You must do the sum to prove it," said the
Yankee answering drum.

Thus they answered—hoping, fearing,
Some in faith and doubting some,
Till a trumpet voice proclaiming
Said: "My chosen people, come!"
Then the drum,
Lo, was dumb!
For the great heart of the nation, throb-
bing, answered: "Lord, we come."
—Bret Harte.

The Woman of Gentle Heart.

The woman of gentle, kind nature, who always looks upon the bright side of life, is apt to be underestimated in these modern days. She does not aim to achieve great things, she is only an ordinary woman, who does her work day by day, believes in God and trusts him to solve the problems she cannot understand. Her womanly logic finds good in everything and takes life's blessings gratefully and life's hardships as lessons. No matter how dark the day or how discouraging the circumstances, she finds courage to look beyond the darkness to a brighter time. Small ills like a week of rain in housecleaning time, an avalanche of unexpected company, the incorrigible stupidity of servants, or any of the thousand minor trials of life which would unnerve a fretful woman, do not disturb her calm nature. She looks beyond the trial of to-day and takes up the extra burdens cheerfully, knowing that they will not last.

Such a woman as this, whether she live in a lowly cottage or in a palace, is blessed and beloved. Her learning may not awe her neighbors, and in the eyes of the public she may have achieved very little, but the most hopeless are cheered by her kindness. The weak and unfortunate seek her counsel, knowing well that her generous heart will render no harsh judgment. She never indulges in gossip, and invariably changes the subject when gossip is introduced. She may not be an intellectual light, though a kind heart does not prevent the possession of a great mind. Many women whose names are written among the greatest could be mentioned who possessed the kindly heart and the generous judgment which made them beloved by every one who knew them.

Many years ago a wise old man, desiring to give a prize that should be of an unique character, offered to the graduating class of a certain school a medal to be given to the most amiable young woman. This medal was conscientiously awarded for a number of years, while the school existed, and in no case did it fall into the hands of a foolish or dull student. A well-balanced disposition is apt to be associated with a well-balanced mind. There is no greater mistake than the impression so general that an amiable woman is apt to be dull. She is not likely to be self-assertive. The spirit of self-forgetfulness, which controls her thoughts and actions, would prevent this.

She may have great feeling of her own
Which lesser souls may never know,
Yet

No simplest duty is forgot;
Life hath no dull and lowly spot
That does not in her sunshine share.

MERCHANTS say the demand for flags and bunting throughout the western country exceeds that even of the World's Fair year. All the big stores are making large demands for the red, white and blue, and claim that the manufacturers found themselves unprepared for the wave of patriotic enthusiasm. The frequent display of the Cuban flag beside "Old Glory" is noteworthy.

An Ambitious Princess.

Princess Victoria, the only unmarried daughter of the prince and princess of Wales, is a woman looking for some useful mission that a royal girl may fill without disgracing her family, says a *Record* correspondent. She does not wish to marry, though divers good offers have been made for her hand, since of the three sisters she is far and away the most clever and companionable, and a number of eligible young German and Swedish princes and grand dukes have really wished to have her to wife. But the Princess Victoria has not yet found a husband to her mind, and to her mother's great dismay she cherishes an ardent ambition to be a genuine wage earner. Two years ago she fitted herself for nursing and announced her intention of entering a London hospital. There were serious family conclaves, and not until sent to interview her very decided grandmamma on the question did the young princess relinquish the plan. Inheriting a decided artistic taste from her mother, this royal spinster is now turning her attention to bookbinding and the designing of book covers. The library at Sandringham is really enriched with some of her excellent work, and at a recent exhibition of book covers in London two examples contributed by a Miss Matthews won prizes. It was not until weeks afterward that the judges, dispensers of prizes, or the royal family themselves knew that the energetic princess had won these testimonials to her excellent taste and handicraft under so commonplace a name.

France has just enacted a law which one is inclined to wish might be put into operation on this side of the water. No baby under a year is to be allowed to have solid food without the authority of a qualified medical man. Among us it is no uncommon thing to see a baby of eight or nine months fed on (salted or fresh), potatoes, coffee, or whatever the mother at the moment may be eating herself. When convulsions from indigestion set in, there is surprise and consternation, but never a sign of any appreciation of the laws of cause and effect. The long rubber tubes attached to nursing bottles are forbidden, and heavy penalties are enforced for any disobedience in that direction. That these tubes cannot be kept properly sterilized is a recognized fact.

Strange as it may seem, women who claim to be good cooks still serve greasy soups, abominations to the eye, palate and stomach. As remedy for this, the "soup digester," a kettle with a faucet near the bottom, by which the clear liquid may be drawn off without the fat. Without the convenience of this utensil, grandmother's "good old way" is always available—to let the soup stand over night, when the grease can be easily removed in a solid cake. Moral: Greasy soups are without excuse and an evidence of carelessness or ignorance!

Unsightly finger marks disappear from varnished furniture when rubbed with sweet oil, and from oiled wood if kerosene is rubbed on the spots. A bruise should be treated with a piece of brown paper, folded several times and soaked in hot water. Over this hold a moderately warm iron until all steaming ceases. If necessary, repeat the process, remembering that one application does not always turn out a success. Always apply alcohol sparingly upon the furniture, if at all, or it will destroy the polish.

Glass spoons are sold at the drug stores for the taking of medicine which may tarnish silver. Better, however, than these are the glass tubes, which keep such powerful drugs away from the teeth as well; and better, perhaps, than both is the attention to food and hygienic living, which does away with the necessity of any such heroic dosing.

After removing seeds from raisins, cover seeds with cold water, soak one-half hour, simmer one hour, strain; use juice in mince meat, or seal in fruit jar for use in pudding sauce.

Chaff.

An ambitious young man wrote to an author for advice. "I'm only making \$10 a month at my business," he wrote, "and I think I could make a success in literature."

The author replied: "I am only averaging \$9 a month at my business. Tell me what yours is, and if you are anxious to jump into literature I'll swap with you."

Naval—I pity the Spanish officers and men if their vessels approach a certain part of our coast.

Reserve—Where, for instance?

Naval—Well, just fancy their awful predicament if the mosquito fleet should swoop down on 'em off New Jersey.

In the course of a morning call on the Rev. Dr. Fourthly, the Rev. Dr. Sprightly remarked:

"By the way, doctor, I conducted a funeral for you once. Would it be convenient for you to do a wedding for me next Thursday?"

"Yes," replied the other. "You are compelled to leave town that day, I presume?"

"I am," rejoined Mr. Sprightly, "but not till after the wedding. I—I am to be the bridegroom."

It was just after the war had been declared, and the quiet man saw the noisy one sneaking away from an excited crowd.

"What's the matter?" asked the quiet man.

"They're discussing the war," replied the noisy one.

"Well, you have been yelling for war for the last two months, haven't you?" demanded the quiet man.

"Of course I have," returned the noisy one; "but, hang it all, these people are talking about enlisting."

She: "And, now that we are engaged, John, dear, how long shall the engagement be for?" He (an absent-minded lawyer, who has just drawn up a street-car lease): "Oh, 99 years, I s'pose."

Artist (to Mr. Henpekt): "Now, don't you think this is a speaking likeness of your wife, sir?" Mr. Henpekt: "Well, when my wife speaks to me, she always shakes her fist at me; you've omitted that!"

Infantine Philosophy—Tottie (aged five): "I wonder why babies is always born in de night time." Lottie (aged seven, a little wiser): "Don't you know? It's cos they wants to make sure of findin' their mothers at home."

"You say, mamma," said Bobby, "that I mustn't hit Tommy Jones when I'm at his house, because it isn't polite, and that it isn't polite to hit him when he's visiting me. Then when can I whack him—on the street?"

Lounger: "Do cookbooks form an important item in your sales?" Book-seller: "Yes, we sell them by the thousand." "The women appreciate them, eh?" "Oh, the women don't buy them; their husbands do."

At a meeting of the Tri-State Medical Society, April 5th, Dr. J. J. Brownson of Dubuque, Iowa, reported the case of a man who was terribly injured by coming in contact with a live electric wire. He lost one arm and part of his other hand, besides being burned on other parts of his body. The man received 2400 volts and still lived—the greatest number ever received by a human being and recovered from. The next greatest number of volts passed through the human body without causing death was received by a lineman in New York, who sustained a shock of 1000 on two different occasions, and

whose miraculous escape from death has earned for him the sobriquet of the "human lightning rod."

DOMESTIC ECONOMY.

Domestic Hints.

FAVORITE MUFFINS.—One cup sweet milk, one egg, the yolk and white beaten separately, one teaspoon sugar, one teaspoon salt, one teaspoon baking powder, piece of butter size of an egg, two cups flour. Bake in muffin rings.

QUICK CREAM CAKE.—Break two eggs into a teacup and fill up with sour cream. One cupful of sugar, two cupfuls of flour, one teaspoonful of soda, flavor to taste. Beat the cream and eggs together, add sugar and beat again, then the flour and soda.

SLICED BUTTERED CARROTS.—Boil the carrots in salted water, with cover off, until tender; when done slice and peel very thin. Season each layer with a sprinkling of salt and pepper, and a teaspoonful melted butter over the whole; then add vinegar enough to cover. Serve while warm.

FAIRY LOAF.—Four eggs, one-half pound of white sugar, one pint of sour cream, two tablespoonfuls of soda, flour to make a stiff batter. Beat sugar and eggs light, then add soda and flour, one cupful of grated cocoanut and almond extract to taste. Bake in a loaf, ice with clear icing and sprinkle thickly with cocoanut.

CORN BREAD.—One and one-half cups flour, one cup corn meal, one-third cup sugar, one-fourth cup butter, one cup milk, two eggs beaten separately, two teaspoons baking powder. Cream the butter and sugar together, add yolks, then milk, then cornmeal, then flour, to which the baking powder has been added, and lastly the beaten whites.

DRIED APPLE CAKE.—Soak three cups of dried apples over night in warm water. In the morning chop or cut them into small bits, put in a stewpan with two cupfuls of molasses and simmer for two hours; add two beaten eggs, one cupful of sugar, one of milk, one-half cupful of butter, two teaspoonfuls of soda, spice to taste, and flour enough to make a stiff batter. Bake as you would fruit cake.

VEAL CURRY.—Cut two pounds of lean veal in pieces, put in a pan with a piece of butter, size of an egg, and let it fry to a nice brown; then mix in a large tablespoonful of flour, a tablespoonful of curry powder, salt and pepper. When all are well mixed, add a pint of hot water and let it boil about twenty minutes, skimming off all fat. Rice croquettes are nice served with this dish.

SPOON DROPKES.—One cupful of flour, one-half of a cupful of rye meal, one-half of a cupful of cornmeal, one cupful of sugar, two eggs, two spoonfuls of molasses, one tablespoonful of melted butter, one sour apple chopped fine, one-quarter of a teaspoonful each of allspice, clove and nutmeg, one-half of a teaspoonful of cinnamon, one cupful of sour milk, one-half of a teaspoonful of soda. Drop by small spoonfuls into smoking-hot fat and cook golden brown.

BEEF BROTH.—Cut some pieces of lean beef into small pieces, cover with cold water, and boil until the meat comes to pieces; then strain through a colander and let the broth stand until cold. Take off any particles of fat that are on top, season with salt and pepper, and add small squares of toasted bread. Rice, sage and tapioca may be used instead of toast, if preferred. Other meat broths are made in the same manner.

Gives Perfect Satisfaction.
Granite State Evaporator Co.
Gentlemen:—The Granite State Feed Cooker and Water Heater which I purchased of you some time ago is giving perfect satisfaction. Very little fuel is required and a large amount of heat is produced. Every stock-raiser should own one. In my opinion, it is the best made.
Yours truly,
ROBERT SHERON.
25 gallon, \$12; 50 gallon, \$17; 100 gallon, \$24.
GRANITE STATE EVAPORATOR CO., 6 Temple Court, N.Y. City



S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, May 18, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | July. | Sept. |
|----------------|-------------------|-----------------|
| Wednesday..... | \$1 15 @ 09 3/4 | \$ 90 @ 92 3/4 |
| Thursday..... | 1 12 1/2 @ 07 3/4 | 92 3/4 @ 90 3/4 |
| Friday..... | 1 07 @ 04 1/4 | 89 3/4 @ 87 3/4 |
| Saturday..... | 1 01 @ 05 3/4 | 87 3/4 @ 89 3/4 |
| Monday..... | 1 08 @ 09 3/4 | 90 @ 92 |
| Tuesday..... | 1 10 @ 01 08 | 91 3/4 @ 89 3/4 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | July. | Dec. |
|----------------|-------------|------------|
| Wednesday..... | 11s 2 3/4 d | 7s 4 d |
| Thursday..... | 11s 3 3/4 d | 7s 4 3/4 d |
| Friday..... | 10s 9 3/4 d | 7s 3 3/4 d |
| Saturday..... | 10s 5 d | 7s 2 3/4 d |
| Monday..... | 10s 8 d | 7s 3 3/4 d |
| Tuesday..... | 10s 11 d | 7s 5 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|-----------|---------------------|
| Thursday..... | \$ 1 15 @ | \$1 7 3/4 @ 1 7 3/4 |
| Friday..... | 1 79 @ | 1 68 3/4 @ 1 70 3/4 |
| Saturday..... | @ | 1 69 3/4 @ 1 70 3/4 |
| Monday..... | @ | 1 71 @ 1 69 3/4 |
| Tuesday..... | @ | 1 69 3/4 @ 1 64 |
| Wednesday..... | @ | 1 65 @ 1 62 1/2 |

Wheat.

The wheat market has been decidedly unsettled in this center since last review and spot values have suffered a quotable decline of 5 to 7 1/2 c per cental or \$1 @ 1.50 per ton. The weakness was fully as much or more the result of local than of outside influences. The rain of the week, aggregating about 1 1/2 inches in this city, and extending over a large portion of the interior, had probably more to do with causing the depression experienced than any other one cause. In the local speculative market the decline was still greater than in spot values, Dec. wheat selling fully 12 1/2 c under the figures of a week ago. Near deliveries in Liverpool dropped the equivalent of nearly 10 c per cental, but later deliveries are almost as high as at this time last week and have been higher in the meantime. Chicago has been hobbling up and down, and in the aggregate shows nearly as great a loss as that experienced here. The spot market closed dull and weak, with buyers and sellers apart.

A noteworthy feature in the market the past week has been the outward movement of wheat by rail to New Orleans, in transit for Europe. The shipment of 2000 tons has been contracted for in this manner, the freight rate through to Liverpool being reported at \$11 per ton. The wheat is to go from New Orleans in a neutral ship and is supposed to be for France. The payment of above comparatively stiff freight rate, equivalent to 42 1/2 c by sailing vessel, illustrates emphatically the urgent need abroad for speedy deliveries of wheat. It also shows in strong light the great need for this coast of a canal across the isthmus. The immense benefit such a canal would be to the entire country is being emphasized in unmistakable manner by the war now on between this country and Spain. If the war will hasten the completion of the Nicaragua canal, it will have been the means incidentally of benefiting incalculably the entire United States, and more especially the Pacific coast.

The rainstorm of Saturday and Sunday proved one of the heaviest of the season in this State, and, while rather late, did a vast amount of good to grain in the hill lands, where the previous moisture had not totally dried out. With the same rain six weeks earlier, California might have had a bonanza crop. As it is, the yield of wheat and other cereals is likely to prove more liberal than the most optimistic thought probable a week ago. Much will depend, of course, on the weather during the next few weeks or until harvest.

California Milling.....\$1 77 1/2 @ 1 83 1/4
Cal. No. 1 shipping, alongside.....1 70 @ 1 75
Oregon Valley.....1 70 @ 1 75
Walla Walla Blue Stem.....1 75 @ 1 80
Walla Walla Club.....1 67 1/2 @ 1 72 1/2

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 white wheat per cental for the week were as follows for the options named:

May, 1898, delivery, \$1.79 @ 1.72 1/2.
December, 1898, delivery, \$1.74 1/2 @ 1.62 1/2.
Wednesday, at regular noon session of Call Board, May wheat sold at @—;
December, 1898, \$1.65 @ 1.62 1/2.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|-----------------------|-------------------|
| Liv. quotations..... | 6s 7 3/4 @ 6s 7 3/4 d | 11s 0 d @ 11s 1 d |
| Freight rates..... | 17 1/4 @—s | @—27 1/4 s |
| Local market..... | \$1.30 @ 1.37 1/2 | \$1.70 @ 1.75 |

The prices above are for spot lots of stand-

ard No. 1 California in Liverpool, and for good to choice shipping in this city.

Flour.

Values for flour since previous review have been maintained at about same range as last quoted. Spot supplies are of only moderate volume, and are not likely to prove excessive for some weeks to come. Local millers here are experiencing difficulty in securing desirable milling wheat in noteworthy quantity. Arrivals of flour from Oregon and Washington are fairly liberal and above the average.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | \$4 00 @ 4 15 |
| Superfine, good to choice..... | 4 25 @ 4 50 |
| Country grades, extras..... | 5 50 @ 5 75 |
| Choice and extra choice..... | 5 75 @ 6 00 |
| Fancy brands, jobbing..... | 6 00 @ 6 15 |
| Oregon, Bakers' extra..... | 5 50 @ 5 75 |
| Walla Walla, Bakers' extra..... | 5 50 @ 5 75 |

Barley.

The market for this cereal has not displayed much activity the current week. Limited stocks and views of holders considerably above buyers' ideas of values, combined to operate against activity. The rainstorm of Saturday and Sunday also tended to restrict business, imparting an easier tone, and causing buyers to feel more justified in holding off than previous to the rain. That there will be a very heavy increase in the yield of barley in California on account of this week's wet weather is not probable, as much of the area seeded to barley had been either cut for hay or was too far gone to be benefited by moisture. But with the condition of grazing lands improved, prospects are that there will be decreased requirements for feed grain, and this naturally has a softening effect on values. The most serious drawback is that all other feed cereals are at present relatively cheaper than barley. Such transfers as have been effected were almost wholly in feed descriptions. Brewers continue indifferent to offerings. Futures did not lack for attention, but ranged much lower than previous week.

Feed, No. 1 to choice.....1 33 1/4 @—
Feed, fair to good.....1 30 @—
Brewing, No. 1 to choice.....1 37 1/4 @ 1 15
Chevallier, No. 1 to choice.....@—
Chevallier, No. 2.....@—

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

May, 1898, delivery, \$1.35 1/2 @ 1.32 1/2.
December, 1898, delivery, \$1.32 1/2 @ 1.26 1/2.
Wednesday at regular noon session of the Call Board May, 1898, feed sold at \$— @—;
Dec., 1898, \$1.27 1/2 @ 1.26 1/2 bid.

Oats.

Market has ruled fairly steady for all descriptions now offering in quotable quantity. Arrivals lately have been of fair volume from Oregon and Washington, which are at all times the principal sources of supplies for this market. As values have been lately and continue to be at quite reasonable levels, there is little or no probability of prices being materially lower in the near future.

| | |
|-------------------------------|---------------------|
| White Oats, fancy feed..... | 1 40 @— |
| White, good to choice..... | 1 35 @ 1 37 1/2 |
| White, poor to fair..... | 1 30 @ 1 32 1/2 |
| Gray, common to choice..... | 1 32 1/2 @ 1 37 1/2 |
| Milling..... | 1 37 1/2 @ 1 40 |
| Surprise, good to choice..... | 1 37 1/2 @ 1 42 1/2 |
| Black Russian..... | @— |
| Red..... | @— |

Corn.

The Eastern product is not arriving so freely as a few weeks ago, but there are liberal supplies in store here. This corn is being mostly held against future needs, rather than to crowd the same to sale immediately at reduced figures. Values for the imported article are in consequence being well maintained at the comparatively low range now current. There are no heavy stocks of the domestic article, either White or Large or Small Yellow, but very limited quantities are required to satisfy the demand at prices generally asked.

| | |
|----------------------------------|-----------------|
| Large White, good to choice..... | 1 15 @ 1 30 |
| Large Yellow..... | 1 15 @ 1 20 |
| Small Yellow..... | 1 25 @ 1 30 |
| Eastern Yellow..... | 1 07 1/2 @ 1 15 |
| Egyptian White..... | @— |
| Popcorn, shelled, 3 lb..... | @— |

Rye.

Values remain about as last quoted, with supplies of light volume but sufficient for current needs.

Good to choice, new.....1 37 1/2 @ 1 40

Buckwheat.

The same lack of offerings as previously noted continues to be experienced, and values are in consequence not very well defined.

Good to choice.....1 80 @ 1 85
Silverskin.....@—

Beans.

With improved crop prospects, more especially in the Sacramento river district, in consequence of the recent rain, the market is less buoyant in tone than a week ago. The conditions in the bean district in the southern part of the State are reported to be little or no better than at date of last issue, no previous rain having fallen since January.

Asking figures for prime to choice qualities show no material reduction, but to affect free sales the acceptance of lower figures would be necessary. About 3000 sacks of White beans were taken here this week by the Government, and more on same account will likely soon be called for.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 85 @ 2 10 |
| Small White, good to choice..... | 1 90 @ 2 15 |
| Lady Washington..... | 1 90 @ 2 10 |
| Butter, small..... | 1 60 @ 1 75 |
| Butter, large..... | 1 75 @ 1 90 |
| Pinks..... | 2 65 @ 2 75 |
| Bayos, good to choice..... | 2 90 @ 3 10 |
| Reds..... | 2 75 @ 3 00 |
| Red Kidneys..... | 2 90 @ 3 00 |
| Limas, good to choice..... | 3 00 @ 3 10 |
| Black-eye Beans..... | 3 30 @ 3 50 |
| Horse Beans..... | 1 30 @ 1 40 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

The following review of the Eastern bean market comes through by recent mail from a New York authority. Prices quoted are per 60-lb bushel:

It could hardly be expected that the activity and buoyancy which marked the course of trade for several weeks could continue without some interruption, and the little check to the upward turn which has come to the market may prove of benefit in the long run. The "boom" did not spend its force until Tuesday of this week, and by that time values for some varieties had been carried 5c above the closing rates of last week. Following this just a little reaction has occurred, but at the rates now quoted the tone of the market is fairly steady. Receipts have continued on a small scale until near the close, when a slight increase is noted from some sections, but the country is very strong and the recent large business has materially reduced the stock at all points of production. The quietness that is now experienced in this market is due to the fact that buyers operated freely on the advance and the trade has become pretty well stocked. To what extent the Government will buy is problematical, but if the war continues there is strong probability that a good many beans will be wanted, which will be an important factor in shaping the future course of the market. Best State Marrow are now offering generally at \$1.80, and most of the choice marks of Medium and Pea can be bought at \$1.50. Red Kidney are firm at \$2.10 and it would be difficult to secure any quantity at that. A few lots of White Kidney have sold at \$1.70 to \$1.75 and of Turtle Soup at \$1.60 to \$1.70. Yellow Eye have had sales at \$1.50. California Lima have ruled strong, with buyers showing fair interest. Some nice stock has been secured within a day or two at \$2.20, but the general asking rate is \$2.25. A line of 2500 bags that went from San Francisco direct to London arrived here for the latter port this week. They have all been sold at good prices, and other lots are in transit. California Lady Washington have attracted attention; 3000 bags reported sold at \$1.40, and some jobbing business in new stock at \$1.45 to \$1.50. Green peas were held higher early in the week, but a quieter trade since has caused a slightly easier feeling.

Dried Peas.

There is little of special interest to record concerning this product. There are few domestic offerings, either on the spot or to arrive. Values remain nominally as last quoted.

Green Peas, California.....\$1 90 @ 2 00
Niles Peas.....1 65 @ 1 75

Wool.

Beyond inquiry for wools suitable for army and navy cloths and Government blankets, to fill contracts now in the hands of manufacturers, there is no demand to record. Only long and strong staple wools will fill the bill for the cloths in question, as they are submitted to severe tests before being accepted. This class of wool is in light stock and is being held in Eastern centers at an advance of fully 2 cents per pound. In the local market nothing has yet transpired to enable the giving of quotations for wools sheared this season.

| | |
|-----------------------------------|---------|
| Oregon Eastern, choice..... | 12 @ 14 |
| Oregon Eastern, fair to good..... | 10 @ 11 |

FALL.

| | |
|------------------------|---------|
| Northern, free..... | 11 @ 13 |
| Southern Mountain..... | 9 @ 12 |

Hops.

There is no improvement to note in the situation. Trade is almost stagnant, both for export and on local account. As prospects for coming crop, both in this country and in Europe, are in the main good, there is little probability of any special demand being developed for 1897 hops during the balance of the season. Neither brewers nor dealers who are not in actual need will be inclined to purchase, except at bargain figures.

Good to choice, 1897 crop.....10 @ 13

The hop market on the Atlantic side is thus outlined, according to late mail advices, by a New York contemporary:

So little stock is arriving from the country that local holdings are being gradually reduced, notwithstanding the dullness in trade. There is nothing in the present outlook that seems to hold out any encouragement of better prices, and for that reason holders do not let any favorable opportunity to sell pass by, though there is no disposition to force business, except possibly in the very poor grades. There are still a number of the poor, moldy Oregon hops here and other points, and the almost worthless character of the stock has made sellers anxious to move them regardless of price. They can be bought easily at 6 to 7 c and a forced sale or two is reported at a still lower figure. To a certain extent all values must be regarded as somewhat nominal at the present moment. They

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are largely a matter of negotiation, and transactions on much the same class of stock are likely to differ 10 to 15 c per pound. In the absence of any really choice state hops the is practically the best rate obtained, and that figure will cover the best Pacifics, aside from a few lots of the fine State, which sell without much regard to the general market. Here and there a sale is reported in the interior of this State, and the stock in Oregon is thought to be down to 1000 bales or less. The yards are backward because of continued cold, stormy weather.

Hay and Straw.

The old saying, "It is an ill wind which blows no good," might be changed to: It is a rare rain which does no harm. Large quantities of new hay were exposed to this week's rain and will be damaged more or less in consequence. The injury may prove light or serious, owing to the favorableness or otherwise of the weather to follow. A wider range in prices is almost certain to be experienced for new crop than would have been the case without rain in haying time. Some argue that the market should have a firmer tone on account of the rain, not only owing to damage done to the crop, but also on account of considerable area being now reserved for grain which would have been cut for hay had there been continued dry weather. On the other hand, it should be remembered that much less hay than ordinarily is now being consumed, on account of the high price. Many horses have been recently gotten rid of in one way or another, both in town and country, as owners could not afford to feed them. In not a few instances, push carts have been substituted for delivery wagons.

| | |
|--------------------|---------------|
| Wheat..... | 19 00 @ 24 00 |
| Wheat and Oat..... | 19 00 @ 23 00 |
| Oat..... | 17 00 @ 19 00 |
| Barley..... | @— |
| Timothy..... | 15 00 @ 18 00 |
| Alfalfa..... | 12 00 @ 13 00 |
| Compressed..... | 19 00 @ 24 00 |
| Straw, 3 bale..... | 75 @ 1 00 |

Millstuffs.

Market is in the main easier. Bran and Middlings are going at reduced figures. Rolled Barley tended in favor of buyers. Milled Corn was without quotable change.

Bran, 3 ton.....18 50 @ 19 50
Middlings.....18 50 @ 23 00
Barley, Rolled.....28 00 @ 28 50
Cornmeal.....24 00 @ 24 50
Cracked Corn.....25 00 @ 25 50

Seeds.

A very quiet market is noted for all kinds of seeds. Mustard Seed is in such light supply that little more than nominal quotations are possible. Flaxseed is offered very sparingly. Latest reported sales have been at figures indicating a firm market. Alfalfa continues to be neglected and market is weak. Business doing in bird seed is at figures warranting no changes in quotations.

| | |
|----------------------------|---------------|
| Mustard, Yellow..... | 3 25 @ 3 50 |
| Mustard, Trieste Seed..... | 3 50 @ 3 75 |
| Mustard, Wild Brown..... | 2 75 @ 3 25 |
| Flax..... | 2 25 @ 2 40 |
| Canary..... | 2 1/2 @ 2 3/4 |
| Rape..... | 2 1/2 @ 3 |
| Hemp..... | 2 1/2 @ 3 1/4 |
| Alfalfa, Utah..... | @— |

Bags and Bagging.

Grain Bags are obtainable for either spot or forward delivery at fully as low figures as previously quoted, but buyers fail to put in an appearance. Market for other bags and bagging is also quiet, with quotable values in same position as before noted in this column.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, 22x36, spot..... | 5 1/2 @ |
| State Prison bags, per 100..... | 5 30 @ |
| Wool sacks, 4 lb..... | 30 @ |
| Wool sacks, 3 1/2 lb..... | 27 @ |
| Gunnies..... | 9 @ 10 |
| Bean bags..... | 4 1/2 @ 4 3/4 |
| Fruit sacks, cotton..... | 5 1/2 @ 6 |

Hides, Pelts and Tallow.

Tendency of values in Hide market has been to more firmness, but no appreciable changes in prices have been effected in this center. Pelts have been arriving freely and values for the same have not been very well sustained, although market can hardly be termed quotably lower. Tallow is commanding moderately steady rates, with demand sufficient to absorb offerings about as fast as received.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|---------|
| Heavy Steers, over 56 lbs..... | @ 10 | @ 9 |
| Medium Steers, 48 to 56 lbs..... | @ 9 | @ 8 |
| Light Steers, under 48 lbs..... | @ 8 1/2 | @ 7 1/2 |
| Heavy Cow Hides, over 50 lbs..... | @ 9 | @ 8 |
| Light Cow Hides, under 50 lbs..... | @ 8 1/2 | @ 7 1/2 |
| Wet Salted Kip..... | @ 9 1/2 | @ 8 1/2 |
| Wet Salted Veal..... | @ 10 | @ 9 |
| Wet Salted Calf..... | @ 10 | @ 9 |
| Dry Hides..... | @ 16 1/2 | @ 13 |
| Dry Kip and Veal, 11 to 16 lbs..... | @ 16 1/2 | @ 12 |
| Dry Calf, under 4 lbs..... | @ 18 @ 20 | @ 17 |
| Horse Hides, large..... | 2 25 @ 2 75 | |
| Horse Hides, medium..... | 2 00 @ 2 25 | |
| Horse Hides, small..... | 25 @ 30 | |
| Colts' Hides..... | 25 @ 30 | |

Two Kinds
of Men.

Some men won't advertise when they are busy—think it will last forever—
Some men won't advertise when times are dull—think the crack o' doom is just about to the city line.
There are others who advertise all the time.
The latter attract inquiries and orders, and in good times can pick what they want.
In dull times they get all there is going—the other fellow is out of business.
One is an optimist in prosperity, a pessimist in adversity, and a narrow-gauge weakling all the time.
The other is just a plain, common-sense business man.

WHICH KIND ARE YOU?

| | | |
|----------------------------------|----|---------|
| Pelts, long wool, per skin..... | 90 | @ 15 |
| Pelts, medium, per skin..... | 70 | @ 60 |
| Pelts, short wool, per skin..... | 40 | @ 60 |
| Pelts, shearing, per skin..... | 15 | @ 30 |
| Deer Skins, best summer..... | 25 | @ 30 |
| Deer Skins, good medium..... | 20 | @ 20 |
| Deer Skins, thin winter..... | 10 | @ 10 |
| Elk Hides..... | 10 | @ 12 |
| Tallow, good quality..... | 3 | @ 3 1/2 |
| Tallow, No. 2..... | 2 | @ 2 1/2 |
| Goat Skins, perfect..... | 30 | @ 3 1/2 |
| Goat Skins, damaged..... | 10 | @ 20 |
| Kid Skins..... | 5 | @ 10 |

Honey.

Market is tolerably well stocked with Comb honey of various grades, and this description is obtainable at relatively easier figures than is extracted of any sort. Supplies of the latter are very light, and are likely to so continue for months to come.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 5 1/4 @ 6 |
| Extracted, Light Amber..... | 4 1/4 @ 5 1/4 |
| White Comb, 1-lb frames..... | 8 1/4 @ 10 |
| Amber Comb..... | 6 1/4 @ 7 1/4 |

Beeswax.

There are no large quantities offering, but in the absence of shipping demand, or of heavy local buying, there is no noteworthy strength in the market.

| | |
|---------------------------|---------|
| Fair to choice, 1-lb..... | 23 @ 25 |
|---------------------------|---------|

Live Stock and Meats.

Beef was in fair receipt, and showed tolerably good average quality. Values remained about as last noted. Mutton was not in quite such heavy supply as for a week or two preceding, but stocks were ample for immediate requirements. Hogs desirable for packers were in good demand at an advance. Soft and poor hogs continued to sell slowly at low figures.

| | |
|---|---------------|
| Beef, 1st quality, dressed, net 1-lb..... | 6 @ 6 1/4 |
| Beef, 2d quality..... | 5 @ 5 1/4 |
| Beef, 3d quality..... | 4 @ 5 |
| Mutton—ewes, 7@7 1/2; wethers..... | 8 @ |
| Hogs, hard grain fed, medium..... | 4 1/2 @ 4 1/4 |
| Hogs, small..... | 3 1/2 @ 4 |
| Hogs, large hard..... | 3 1/2 @ 4 |
| Hogs, soft..... | 2 1/4 @ 2 1/2 |
| Hogs, stock..... | 2 @ |
| Hogs, country dressed..... | 4 1/2 @ 5 |
| Veal, small, 1-lb..... | 6 @ 7 |
| Veal, large, 1-lb..... | 5 @ 6 |
| Lamb, Yearling, 1-lb..... | 8 @ 8 1/2 |
| Lamb, Spring, 1-lb..... | 8 @ 8 1/2 |

Poultry.

Old poultry of nearly every description was in excessive supply, being rushed in from many sections, owing to the high price of feed. Market for such stock was naturally weak. Small Hens were freely offered down to \$3 per dozen. Young fowls of medium to large size and in fine condition were in very liberal receipt and were sought after at good figures. Young fowls which were small and poor moved slowly at low prices.

| | |
|------------------------------------|-------------|
| Turkeys, dressed, 1-lb..... | @ |
| Turkeys, live hens, 1-lb..... | 10 @ 11 |
| Turkeys, live gobblers..... | 10 @ 11 |
| Hens, Cal., doz..... | 3 00 @ 3 50 |
| Roosters, old..... | 3 25 @ 3 50 |
| Roosters, young, (full-grown)..... | 8 00 @ 9 00 |
| Fryers..... | 6 00 @ 7 00 |
| Broilers, large..... | 4 50 @ 5 00 |
| Broilers, small..... | 2 50 @ 3 00 |
| Ducks, young, doz..... | 3 50 @ 4 00 |
| Ducks, old..... | 3 00 @ 3 50 |
| Geese, pair..... | 1 00 @ |
| Goslings, pair..... | 1 25 @ 1 50 |
| Pigeons, Old, doz..... | 1 00 @ |
| Pigeons, Young..... | 1 25 @ 1 50 |

Butter.

Values for butter have continued at much the same range as last quoted, but the market presents a little easier tone, owing to rains this week having materially improved the outlook for green feed in a large portion of the dairy district of the State. Stocks of packed butter in this center continue light, most of the recent packing having been done at producing points and this butter has not yet come forward.

| | |
|-------------------------------------|-------------|
| Creamery extras, 1-lb..... | 20 @ 21 |
| Creamery firsts..... | 19 1/2 @ 20 |
| Creamery seconds..... | 19 @ 19 1/2 |
| Dairy select..... | 19 @ 19 1/2 |
| Dairy seconds..... | 18 @ |
| Dairy, soft and weedy..... | @ |
| Mixed store..... | 16 @ 17 |
| Creamery in tubs..... | 19 @ 22 |
| Pickled roll..... | @ |
| Dairy in tubs..... | @ |
| Firkin, Cal., choice to select..... | 19 @ 21 |
| Firkin, common to fair..... | 17 @ 18 |

Cheese.

Supplies are not particularly heavy, but are more than sufficient for the immediate demand. Favorite marks going to special custom are commanding in a small way higher rates than are quotable, but the general market cannot be termed firm. Large operators show no inclination to take hold freely.

| | |
|-----------------------------------|------------|
| California fancy flat, new..... | 9 1/2 @ 10 |
| California, good to choice..... | 9 @ 9 1/2 |
| California, fair to good..... | 8 @ 9 |
| California Cheddar..... | 10 @ 11 |
| California, "Young Americas"..... | 10 @ 11 |

Eggs.

The anticipated improvement in the egg market was realized the current week. There was a quotable advance of 1@1 1/2 per doz., with market moderately firm at the higher figures. Arrivals of domestic showed considerable decrease and market was nearly bare of Eastern. Some eggs from the East are reported on the way, however, the markets on the other side of the Rockies showing more ease.

| | |
|---|-----------------|
| California, select, large white and fresh..... | 16 @ 15 |
| California, select, irregular color & size..... | 14 @ |
| California, good to choice store..... | 13 1/2 @ 14 1/2 |
| California, common to fair store..... | @ |
| Oregon, prime..... | @ |
| Held Eastern, as to section and grading..... | 13 1/2 @ 15 |
| Local Cold storage eggs..... | @ |

Vegetables.

New Red Onions were plentiful and cheap. A few Old Onions are on market from Australia, but they are held at high prices. Most kinds of spring vegetables were in reduced receipt on account of rainy weather and sold at an advance, notably Peas, String Beans and Asparagus.

| | |
|--|-------------|
| Asparagus, No. 1 to choice, 1/2 box..... | 1 75 @ 2 25 |
| Asparagus, common to fair, 1/2 box..... | 1 00 @ 1 50 |
| Beans, String, 1-lb..... | 7 @ 10 |

| | |
|--------------------------------------|-------------|
| Beans, Lima, 1/2 lb..... | @ |
| Beans, Refuge, 1/2 lb..... | @ |
| Beans, Wax, 1/2 lb..... | 8 @ 9 |
| Cabbage, choice garden, 1/2 100..... | 65 @ 75 |
| Cauliflower, 1/2 doz..... | 50 @ |
| Corn, Green, 1/2 sack..... | @ |
| Corn, Alameda, 1/2 crate..... | @ |
| Cucumbers, hot house, 1/2 doz..... | 50 @ 1 00 |
| Egg Plant, 1/2 lb..... | 12 1/2 @ 15 |
| Garlic, 1/2 lb..... | @ |
| Mushrooms, Buttons, 1/2 lb..... | @ |
| Mushrooms, Wild, 1/2 lb..... | @ |
| Okra, Dried, 1/2 lb..... | 12 1/2 @ 15 |
| Onions, Yellow, good to choice..... | @ |
| Onions, New Red..... | 60 @ 75 |
| Peas, Sweet, Garden, 1/2 lb..... | 3 @ 4 |
| Peas, Sweet, 1/2 sack..... | 1 25 @ 1 75 |
| Peppers, Green Chile, 1/2 lb..... | 15 @ 20 |
| Rhubarb, ordinary, 1/2 box..... | 50 @ 65 |
| Rhubarb, Mammoth, 1/2 bx..... | 75 @ 85 |
| Squash, Summer, 1/2 lb..... | 10 @ 12 1/2 |
| Tomatoes, 1/2 box or crate..... | 1 25 @ 1 75 |

Potatoes.

Market for Old Potatoes has not shown quite so much firmness as immediately prior to last review, the demand since having been less active and offerings more liberal. Arrivals of Old were mainly Burbank Seedlings from Oregon. New potatoes arrived sparingly and market for desirable qualities tended against buyers.

| | |
|--|---------------|
| Early Rose, River, 1/2 cental..... | @ |
| Peerless, River..... | @ |
| Reds, River..... | @ |
| Garnet Chile, Mission..... | @ |
| Burbanks, Salinas..... | @ |
| Burbanks, River..... | 50 @ 60 |
| Burbanks, Petaluma and Tomales, 1/2 cil..... | 50 @ 75 |
| Burbanks, Humboldt, 1/2 cil..... | 75 @ 90 |
| Burbanks, Oregon, 1/2 cental..... | 65 @ 1 00 |
| Garnet Chile, Oregon..... | @ |
| New Potatoes, 1/2 lb..... | 1 1/4 @ 2 1/2 |
| Sweet River, 1/2 cental..... | @ |
| Sweet Merced..... | 1 00 @ 1 25 |

The Fruit Market.

Fresh Fruits.

The forwarding to market of spring and early summer fruits was interfered with to some extent during a portion of the week by rainy weather. Considerable damage was reported to early Cherries by the rain, but it is doubtful if any serious injury resulted to other fruit through the recent precipitation of moisture. On the other hand, some fruit orchards were greatly benefited by the rain of Saturday and Sunday. Not only did the roots of the trees in many localities receive a greatly needed wetting, but the branches and maturing fruit were washed, leaving them materially improved thereby. Cherries averaged higher than last quoted, with market quite firm for choice to select. Currants arrived yesterday (Tuesday) from San Leandro. They were ripe and in better condition than is ordinarily experienced for first receipts. For crates holding four baskets \$1.75 was realized, being about 17 1/2c per lb. Blackberries continued in very limited receipt, selling at 15c per 1-lb. basket. Raspberries were on market, but hardly in sufficient quantity to quote. Sales were effected at \$2 per crate. The arrival of Apricots was not large, but very few of the Pringle variety were required to satisfy the demand. Strawberries sold at a decided advance, but with a few days sunshiny weather, lower rates for berries are almost certain to be experienced. Gooseberries brought in a small way better average prices than last week, the quality showing improvement. Apples quoted herewith are remnants of last crop still offering, and which move very slowly.

| | |
|---|-------------|
| Apricots, Pringle, 1/2 box..... | 65 @ 1 00 |
| Apples, fancy, 4-tier, 1/2 box..... | 1 35 @ 1 50 |
| Apples, choice, 4-tier, 1/2 box..... | 1 00 @ 1 25 |
| Apples, fair to good, 50-lb box..... | 60 @ 75 |
| Apples, common to fair, 1/2 box..... | 35 @ 60 |
| Cherries, Black, fair to choice, 1/2 box..... | 60 @ 1 25 |
| Cherries, White and Red, 1/2 box..... | 25 @ 50 |
| Blackberries, 1/2 crate..... | 2 00 @ |
| Raspberries, 1/2 crate..... | 2 00 @ |
| Gooseberries, 1/2 lb..... | 2 @ 3 |
| Strawberries, Longworth, 1/2 chest..... | 4 50 @ 6 00 |
| Strawberries, Large, 1/2 chest..... | 2 50 @ 3 50 |

Dried Fruits.

The market for cured and evaporated fruits has not developed any pronounced changes since last review, but if there is any difference to record there is a firmer and healthier tone. There is little or no undue selling pressure observable, and values throughout are being well sustained at the ruling rates. Considering the limited quantities now offering, there is a fair amount of business doing, both on Eastern and local account. There is very little now going forward to the Klondike, but there is a possibility of a renewal of demand from that quarter in a month or two. With or without Klondike trade, there are no fears that it will be necessary to carry much fruit over into the coming season. There will undoubtedly be few apricots this summer and prices for this variety are expected to rule materially higher than for last crop. Peaches are expected to yield fairly well, but the prospects are least promising in districts where most of the drying and curing is ordinarily done. Prune trees are reported in most orchards to have a heavy setting of fruit, but what percentage will remain on the trees and how the prunes will mature remains to be determined.

EVAPORATED OR BLEACHED.

| | |
|--|---------------|
| Apricots, Royal, in sacks, per lb..... | 6 @ 7 |
| Apricots, Royal, fancy..... | 7 1/2 @ 8 1/2 |
| Apricots, Moorpark..... | 8 @ 10 |
| Apples, in boxes..... | 6 1/2 @ 7 |
| Figs, fancy pressed..... | 8 @ 10 |
| Nectarines, White..... | 3 1/4 @ 4 |
| Nectarines, Red..... | 3 1/4 @ 4 |
| Peaches, unpeeled, choice..... | 4 1/2 @ 5 |
| Peaches, unpeeled, fancy..... | 5 1/2 @ 6 |
| Peaches, peeled, in boxes..... | 9 @ 12 |
| Pears, unpeeled Bartlett's, halved, fancy..... | 7 @ |
| Pears, halved, unpeeled Bartlett's..... | 4 1/2 @ 6 |
| Pears, quartered, unpeeled Bartlett's..... | 4 @ 5 |
| Pears, peeled and sliced..... | @ |
| Plums, pitted..... | 4 @ 5 |
| Prunes, in sacks, 40-50's..... | 5 1/2 @ 6 |
| 50-60's..... | 4 1/4 @ 4 1/2 |
| 60-70's..... | 3 1/2 @ 3 3/4 |
| 70-80's..... | 3 @ 3 1/2 |
| 80-90's..... | 2 1/2 @ 3 |
| 90-100's..... | 2 1/4 @ |

Above figures are on basis of 3 1/4 @ 3 3/4 for 4

sizes. Prunes in boxes, 1/2c higher for 25-lb boxes, 1/2c higher for 50-lb boxes.
4 sizes Santa Claras and equal..... 3 1/4 @
4 sizes San Joaquin and Northern..... 3 @
Prunes, Silver..... 4 @ 7

COMMON SUN-DRIED.

| | |
|-------------------------|-----------|
| Apricots, ordinary..... | 5 @ 6 |
| Apples, sliced..... | 4 @ 4 1/2 |
| Apples, quartered..... | @ |
| Figs, Black..... | 2 @ 3 1/2 |
| Figs, White..... | 3 @ 4 |
| Peaches, unpeeled..... | 3 1/4 @ 4 |
| Plums, unpeeled..... | 1 @ 1 1/2 |

Mail advices of recent date from New York furnish the following concerning the dried fruit market in that center:

Evaporated apples have met an active demand from exporters and market has ruled firm and higher. Prime wire-dried have sold up to 9c and scarcely anything strictly prime could be found lower, while wood-dried have realized 9 1/4c and in instances 9 1/2c for a high grade, with choice to fancy jobbing from 9 1/4 @ 10c. Stock below prime held steadily but rather quiet. Sun-dried apples have received more attention, but holders have been inclined to meet buyers freely and prices have shown no material improvement. Apples have occasionally exceeded 4c, but that figure generally top, with most actual business fractionally lower. Cores and skins have been held steadily at full late prices. Not much doing in small fruits; supply and demand both light and market quiet and unchanged. California fruit has met a continued good demand at full late figures.

| | |
|--|---------------|
| Apricots, Cal. Moorpark, 1897, per lb..... | 8 @ 12 |
| Apricots, Cal. Royal, 1897, per lb..... | 6 1/4 @ 8 1/4 |
| Peaches, Cal., 1897, peeled, per lb..... | 10 @ 16 |
| Peaches, Cal., 1897, unpeeled, per lb..... | 5 @ 9 |
| Pears, Cal., 1897, per lb..... | 5 @ 10 |
| Prunes, Cal., 1897, per lb..... | 3 1/2 @ 8 |

Raisins.

Stocks are showing steady reduction, and were it not for considerable quantities of low grade and damaged raisins handicapping the market, values in all probability would now be higher. As it is, market for all good to choice raisins is firm at the ruling rates. A clean-up is confidently looked for before another season opens.

F. O. B. FRESNO DELIVERY.

| | |
|--------------------------------------|--------|
| Imperial Clusters, per box..... | @ |
| Dehesa Clusters, per box..... | @ |
| Fancy Clusters, per box..... | @ |
| Boxes, London layers, 20-lb box..... | 1 00 @ |

(Usual advance for fractions.)

| | |
|--------------------------------------|---------------|
| Loose Muscatel, 4-crown, 1/2 lb..... | 3 1/4 @ |
| Loose Muscatel, 2-crown..... | 2 1/4 @ 2 1/2 |
| Loose Muscatel, 2-crown..... | 1 1/4 @ 2 |
| Sultanas..... | 3 @ 3 1/4 |
| Seedless Muscatel..... | 1 1/2 @ 2 |
| Dried Grapes..... | 1 @ 1 1/2 |

Citrus Fruits.

Orange market is quiet, owing to the attention of consumers being diverted to more seasonable fruits. A few choice to select Navels sold to fair advantage, but with this exception the market lacked firmness. Lemons were in sufficiently liberal supply to give buyers the advantage, market ruling easy at previous quotations. Limes were in the main rather steadily held.

| | |
|-----------------------------------|-------------|
| Oranges—Navel 1/2 box..... | 1 50 @ 2 50 |
| St. Michaels..... | @ |
| Seedlings..... | 75 @ 1 25 |
| Tangerines, half box..... | 75 @ 1 00 |
| Lemons—Cal., select, 1/2 box..... | 1 75 @ 2 00 |
| Cal., good to choice..... | 1 00 @ 1 50 |
| Cal., common to good..... | 75 @ 1 00 |
| Limes—Mexican, 1/2 box..... | 4 00 @ 4 50 |
| Cal., small box..... | 75 @ 1 00 |

Nuts.

This market remains in all essential respects the same as noted in previous review. Almonds are very scarce. Walnuts offering at present are mostly under choice. Peanuts are in quite limited supply, and for good to choice the market presents a healthy tone.

| | |
|--------------------------------------|-----------|
| California Almonds, paper shell..... | 9 @ 10 |
| California Almonds, soft shell..... | 6 @ 8 |
| California Almonds, hard shell..... | 4 @ 4 1/2 |
| Walnuts White, paper shell..... | 6 @ 7 |
| Walnuts White, soft shell..... | 6 @ 7 |
| Walnuts White, Cal., standard..... | 5 @ 6 |
| Chestnuts, Cal. Italian..... | @ |
| Peanuts, Cal., fair to prime..... | 4 @ 4 1/2 |
| Peanuts, Eastern hand-picked..... | 5 @ 6 |
| Pine Nuts..... | 7 @ 8 |

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|--------------------|--------------------|----------------------|
| Flour, 4-sks..... | 126,826 | 4,671,682 |
| Wheat, cts..... | 155,891 | 9,987,550 |
| Barley, cts..... | 16,638 | 4,378,921 |
| Oats, cts..... | 12,130 | 635,328 |
| Corn, cts..... | 24,613 | 339,428 |
| Rye, cts..... | 2,640 | 41,746 |
| Beans, sks..... | 2,408 | 545,265 |
| Potatoes, sks..... | 15,901 | 1,031,846 |
| Onions, sks..... | 2,877 | 99,751 |
| Hay, tons..... | 2,203 | 114,984 |
| Wool, bales..... | 943 | 66,134 |
| Hops, bales..... | 98 | 8,681 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------|--------------------|----------------------|
| Flour, 4-sks..... | 112,804 | 3,055,776 |
| Wheat, cts..... | 94,147 | 9,650,223 |
| Barley, cts..... | 1,419 | 2,988,894 |
| Oats, cts..... | 343 | 17,770 |
| Corn, cts..... | 3,434 | 41,603 |
| Beans, sks..... | 194 | 292,027 |
| Hay, bales..... | 233 | 73,610 |
| Wool, lbs..... | | 14,199,776 |
| Hops, lbs..... | 1,120 | 1,311,768 |
| Honey, cases..... | 181 | 7,401 |
| Potatoes, pkgs..... | 620 | 180,682 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of the THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offer-

ings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, May 18.—California dried fruits steady; apples firm. Evaporated apples, common, 7 1/2 @ 8 1/4c 1/2 lb.; prime wire tray, 8 1/4 @ 9c; wood dried prime, 9 @ 9 1/2c; choice, 9 1/2c; fancy, 9 1/2 @ 10c. Prunes, 4 @ 8 1/4c 1/2 lb. Apricots, Royal, 8 @ 10c; Moorpark, 10 @ 12c. Peaches, unpeeled, 6 @ 8c; peeled, 12 @ 14c.

Eastern Sales of California Fruit.

CHICAGO, May 16.—The Earl Fruit Company sold California Cherries to-day: Black Tartarian, 80c to \$1.25; Belle de Orleans, 80c; Governor Wood, 55c.

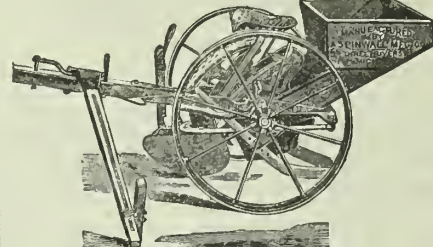
CHICAGO, May 17.—The Earl Fruit Co. sold California cherries to-day at the following prices: Black Tartarian, 55c @ \$1.20; Royal Anne, \$1 @ 1.35; Chapman, 80c; Governor Wood, 50c.

Porter Bros. Co. sold to-day at open auction California fruit at the following prices: Apricots—Pringle, \$1.35 per single crate. Cherries—Tartarian, 40c @ \$1.35 per box; other varieties, 30 @ 80c.

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POULTRY YARD.

Hints on Growing Young Chicks.

It is getting a little late for young chicks in many parts of the State, and yet the suggestions which E. O. Roesle gives in the *Country Gentleman* will be good to remember for next year, if they are not just now available.

Keep Them Growing.—Chickens should be kept growing from the day they are placed in the brooder until maturity, without even one day's setback. This is not a difficult matter, but it must be thoroughly understood. The first day of their brooder existence they will eat little, but on the second day they should be hungry and active. Now begins what is known as judicious feeding. The kind of food selected matters little, provided it contains the proper nourishment. If in doubt as to what to start with, the best way is to consult some successful breeder, and, if he has raised a large percentage on his feed formula, it is pretty safe to try it. This is a much better way than to experiment blindly or to try some of the many patent and expensive foods recommended by theoretical poultry breeders.

When to Feed.—Once the feed has been judged, it should be used with judgment. For example, chickens are out of the hover at daylight, and they are then very hungry and should be fed at once. The time since the night before is a long fast, usually ten or eleven hours. But they should not be allowed to eat all they crave. It is better that they leave off a little hungry. This condition will compel them to start and scratch and exercise with the hope of finding something more to eat. During the day they should be fed regularly about every two hours, but always a little short, for the same reasons as given above. The last feed at night should be a very full one—all they can possibly eat, without leaving any on the feed board.

A mash of some kind I consider absolutely necessary, because in it can be introduced many different things which cannot be fed in any other way. Grit, for example, should be mixed with the mash, thus compelling the chicks to eat it, and not left in a box for them to find or not. Meat also can be fed more easily and judiciously in a mash than in any other way.

Chicks at two days old should be given sifted cracked corn and small wheat mixed together. They should be taught thus early to scratch for and hunt grain. It compels exercise, and is a more natural food than repeated soft mashings five or six times a day. Cabbage at three days old can be given them and they will enjoy it, and it will agree with them.

Signs of Hunger.—In order that your chicks should grow every day as they should, they must be watched carefully, especially at feeding time. If they seem ravenous and cry and rush about when they see you approaching with the feed, it is as it should be. If, on the other hand, they seem contented and utter no cry, they are not hungry and it would be better to wait another half hour. If they eat quickly and clean the board in a few minutes, they are doing exactly right and need the feed; if, on the contrary, they eat slowly and run away and leave some on the board, they are overfed. The board should be scraped clean of all food, and the next feeding time should be delayed a little and a smaller quantity of food given. These signs should be watched carefully, and it is generally best to do your own feeding, or have one person only do it.

Heat.—The feed is not everything, and it alone will not keep your chicks growing. In fact, injudicious feeding will stunt them as quickly as anything else. Too much or too little heat in the hover at night, or too little exercise, will spoil a brooder full of healthy specimens. The chicks are their own thermometer. If they huddle or crowd in a corner of the hover, they are cold and need more heat. If they are well separated and lie flat with their heads flat down they are just right. If they

crowd toward the fringe and stick their heads through, they are too hot and will suffer all night, and are very apt to catch cold and develop bowel trouble next day. The proper degree of heat must therefore be studied and regulated according to the changes of the outside temperature. Lack of exercise or insufficient exercise to work off the regular feed will also stunt them. Chickens can never take too much exercise; in fact, every inducement should be given them to make them active. The more they run and chase each other up and down the yards, the hungrier they will become and the stronger they will grow.

Fresh Air.—Last but by no means least in importance is fresh air. Plenty of fresh air is needed for growing chicks. In fine weather the windows of the brooder-house should be opened wide every day and kept open until night. This may be safely begun on the second or third day, or, in other words, just as soon as the chicks learn the way back to the hover. I know of nothing which will stunt chickens quicker than a hot hover and a warm brooder-house yard.

Judicious feeding, properly regulated heat, plenty of fresh air and exercise, will keep your brooder chickens growing continuously. All these, however, need your personal and careful attention.

Eggs From Australia.

Not many years ago the possibility of shipping eggs from Australia with any likelihood of their reaching England except in a decomposed condition would have been ridiculed as utterly unworthy of consideration. *Chambers' Journal* is responsible for the statement that to-day the thing is not only being accomplished, but the eggs arrive in such first-class condition that they pass as new-laid. This has been rendered possible by the universal employment of refrigerating apparatus on shipboard. The eggs, while still perfectly fresh, are forwarded by the Australian poultry keepers to the cold store, and are shipped to England at the time when eggs are scarce, and consequently at their dearest. Many thousands of dozens, packed in boxes with cardboard divisions, filled up with dry pea-husks, are now forwarded to that country from November to January. In a recent consignment the local price of the eggs at the time of shipping was fivepence, halfpenny per dozen, the freight and packing cost about threepence per dozen, and they realized one shilling and sixpence per dozen retail on arrival in London.

Disappointments With Poultry.

Disappointments come frequently to the keeper of poultry, but most often to the man that expects to get a great deal of money out of the poultry business with little work. He buys a lot of hens, builds a big house, fences off a big lot, makes numerous nests and puts the fowls and the establishment together. He expects they will take care of themselves, and they do it, after a fashion. The lice multiply and the eggs diminish. The fence breaks down and the prowling animals gets in. He feeds without regard to their health, and the birds get indigestion. Disaster after disaster comes upon him. The little chicks fall a prey to lice, cats and rats. Now and then a hawk swoops down and carries away a fat pullet. The gapes get into the throats of the chicks, and they begin to fall over and die. The old birds succumb to indigestion and the flock rapidly decreases. All of this comes as a result of too little work put on the flock.

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THE earth is a result of an explosion that occurred upon the sun, some scientists estimate 30,000,000 of years ago. When this explosion occurred the sun was most likely in a gaseous state and the violence was sufficient to throw the earth far enough away to come within the range of gravital attraction of other planets, consequently what is now the earth did not fall back into the sun from which it had been thrown. Other planets have been caused the same way and from the same source—for instance, the moon and Mars. If a ball should be shot out of a cannon with sufficient force to land it upon Mars, if the inhabitants of that place should use the same word in naming it as we do they would call it "meteorite." If, however, the ball should only have sufficient velocity to carry it say half way to Mars, it would then come to a stop at a point where it would be acted upon by the attraction of all surrounding planets, consequently it would fall upon neither, but would immediately take on a motion or orbit of its own, when it would become a true planet, just as our earth is.—Dictator.

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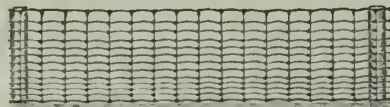
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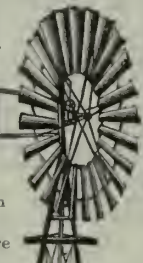
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The Engineering Chemistry of Boiler Water.

At a meeting of the Engineers' Club of Philadelphia on the 2nd ult., H. Leffman presented a paper on the above subject. He stated that when the applicability of a water to steam making purposes is to be determined the dissolving gases become important, while the organic matter may be neglected, unless it is unusually large in amount or exceptional in character. Surface water is well adapted for boiler purposes, except for its liability to turbidity. Subsoil water, or that obtainable from springs and ordinary wells, is usually clear, and contains notable amounts of solid matter. Deep water is very variable in character, even within a limited area. It is often rich dissolved solids, iron compounds, and sodium chloride. The suitability of water for boiler purposes must be considered with reference to the two properties of corroding and scale forming, which are to some extent antagonistic, since the deposit of material on the iron will, of course, protect it. In general, it may be said that the corrosive qualities are due to the oxygen and carbonic acid present in solution, and more rarely to organic or mineral acids, which are highly objectionable.

The scale forming ingredients in water are principally the compounds of calcium and magnesium in the form of sulphates, carbonates, and chlorides, and the amount and character of the scale will depend largely upon the form of combination. In the ordinary use of water the removal of the carbonic acid is brought about by the heating; deposits in carbonates promptly take place to the amount which is independent of the concentration of the water by the conversion of a portion of it into steam. Calcium sulphate is one of the most objectionable ingredients in boiler water. It is soluble in cold water to the extent of over 100 grains to the gallon, and becomes less soluble as the temperature rises, until at about 300° Fahr., which nearly corresponds to sixty pounds pressure, it is almost insoluble. Although the various materials which deposit in boilers are often collectively designated as "scale forming," yet there is a great difference in the character of the deposit. The carbonates produce soft scale, calcium sulphate a hard scale.

As engineers cannot control the laws of nature, and often have no choice of water, an important question is, What may be done to remedy the objectionable conditions? Turbidity may be easily remedied by filtration, but if filters using alum are applied, care should be taken not to use an excess of it, as decided corrosion might be produced, or hard scale. When corrosion is due to free acid, it may be easily overcome by the use of alkaline substances, among which caustic soda and soda ash would be most generally applicable. The corrosion due to dissolved oxygen will be materially reduced by heating the feed water, and also by arrangements for not allowing the water to come directly in contact with a highly heated spot. The prevention of scale is secured in various ways. The magnesium and calcium carbonates that may be held in solution by carbonic acid are all precipitated by the removal or neutralization of that acid. The former may be accomplished by the heating of the water, and the latter by the addition of some basic substance, such as slaked lime or caustic acid. Calcium sulphate being a most objectionable ingredient, much attention has been given to the methods of preventing it from forming hard scale. At the present day the tendency is to the use of direct precipitating agents, among which may be mentioned trisodium phosphate and sodium fluoride. Both these substances convert all calcium and magnesium compounds into insoluble flocculent precipitates, yielding also highly soluble and non-corrosive sodium salts. They seem to meet the practical issues very well, and are in extensive use.

SOME TIME ago inquiry was made of this paper regarding an oil made from maize or Indian corn, and after considerable inquiry on our part it is learned that a concern manufacturing glucose in Chicago, Ill., produces what is called "corn oil." It is extracted by pressure from the germ of the grain by a method similar to that used in the manufacture of linseed oil, leaving a residuum not unlike the oil cake of commerce. In the manufacture of glucose it was forced necessarily to first extract the germ. This, for a long time, was a waste. Now this company produces 350 barrels per day of corn oil. This oil is shipped in second-hand oil barrels; weight, filled, 400 pounds each. The price at the factory is 3 cents per pound. It is mostly shipped to England, where it is used in the manufacture of soap, though some of it is used in Chicago, mostly in mixing cheap paint. It is called a rapid drying oil. It is also used to adulterate linseed oil.

TALC is extracted on a large scale from the granite mountain of St. Barthelemy, in the French Department of Arriege, about twenty miles from the main chain of the Pyrenees. The principal quarry at Tremouin is worked in three banks or terraces, each about 49 feet high. The best rock is of a bright white tint, and feels greasy to the touch when reduced to powder. The quarried rock is brought by a tramway to the end of the quarry in the Axiat valley, and then by wagons eleven miles to Luzenac, where water power is taken from the Arriege river. The mechanical preparation consists of drying in a rotary oven, breaking up small, grinding and sifting, the grinding being effected in mills with steel balls. The larger portion of the product is converted into powder, only a small portion being sent away in a rough state, or cut into pencils for writing on metals. Besides its use in soap and paper making, talc enters into the composition of axle grease.

The Value of Advertising.



D. M. Osborne & Company, of Auburn, New York, who manufacture the largest line of farm implements made by any one concern in the United States, and whose attractive advertisements have been appearing in our columns for the last two months, have been forced to acknowledge that these ads. have been seen and read by a multitude of people. If inquiries can be any criterion to go by. In their ads. they have incidentally offered to send free of charge a book six inches by nine inches, entitled "Handy Book for House and Farm," which is complete in its information for farm and housekeeping and particularly in cooking and baking receipts. The number of inquiries for these books have been and still remains something enormous. The unexpected part of the programme is that many of the ladies, after trying these receipts, have sent to the Advertising Manager, sample boxes of cake of different kinds, pressed chicken, etc. The illustration given, shows his desk nearly covered with these boxes, which speaks imperatively of the interest the ladies have taken in the book.

This book also describes in detail, the Osborne Implements, which have won the reputation of "succeeding where others fail," and are by their excellence, pushing their individuality well to the front in the agricultural world.

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A NEW BOOK. THE CALIFORNIA VEGETABLES IN GARDEN AND FIELD.

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By EDWARD J. WICKSON, A. M.

Professor of Agricultural Practice in the University of California; Author of "California Fruits and How to Grow Them;" President of the California State Floral Society; Horticultural Editor of the "Pacific Rural Press" of San Francisco, etc.

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We take no risk in advising every Californian who has a garden spot to procure a copy.—*San Francisco Chronicle*.

Not only interesting but valuable to every one in this State who cultivates even so small a lot of ground. The author is eminently qualified for the work which he has just completed.—*San Francisco Bulletin*.

For many years there has been an inquiry for a work on vegetable growing in California, and in this book the demand has been adequately met.—*California Fruit Grower*.

It is certain to be of valuable assistance to the practical farmer.—*Oakland Inquirer*.

It is really almost invaluable, we should judge, to those who desire to be informed upon every essential point connected with vegetable growing in the various soils and climates of this State.—*Sacramento Bee*.

It is an exhaustive exposition of the cultivation of vegetables in this State. There is a fund of information in it which is invaluable and indispensable for the man who would make a success of vegetable growing.—*Alameda Enquirer*.

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—Reports from Astoria, Or., show that the salmon pack this season is 25 per cent less than last year. One cannery up to April 19th, '97, packed 2100 cases, and had only packed 300 cases on the same date this year.

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FRUIT MARKETING.

Raisin Growers' Plans.

The raisin growers of the San Joaquin valley are still actively at work in the effort to fix upon some better way of handling the raisin crop than has been had hitherto. At the meeting held in Fresno last Saturday, all the growers—and there were a large number present—decided to adopt the suggestion of the committee of twenty-two to form a growers' association. Two plans for creating a better market for the product of the growers were read, M. Theo. Kearney's and T. C. White's. They were fully discussed. It was decided to hold another meeting May 28th, and in the meantime a committee of prominent growers was appointed to consider the plans proposed and to decide upon one of them. That favored by the committee will be presented by the mass meeting, at which delegates from all the school districts in the raisin section will be present. The meeting last week did not adopt a plan, for the reason that it was desired to have all the growers represented.

Mr. White's Syndicate Plan.—Mr. White then spoke in favor of the syndicate proposed by him. He said that if the syndicate were offered all the raisins at the minimum price of 2½ cents a pound in the sweat box they would make a profit of \$480,000. He thought there would be no difficulty in finding ten men to go into the venture. He was willing to put \$10,000 into it, and he knew of one other capitalist who would also put up that amount. He said the market could be controlled with that much money and probably with much less. Perhaps no money at all would have to be actually advanced; the mere fact that the syndicate stood ready to take all raisins offered at 2½ cents would be sufficient. The syndicate would not take poor raisins or rubbish, and if any were sold under 2½ cents the buyer would naturally know that he was getting an inferior quality of goods.

Mr. Kearney's Plan for Pooling.—M. Theo. Kearney read an able paper elucidating a plan of pooling the entire crop. Among other things, he said: I would suggest that we incorporate as the California Raisin Growers' Association; that the capital stock be fixed at \$500,000, in 100,000 shares of \$5 each; that the shares be open for subscription by raisin growers only, and that no one be allowed to subscribe for more shares than the proportion that his crop bears to the whole yield of the State. Assuming that the whole crop in an average year will amount to 4000 carloads, this capital stock of our association would be equal to \$125 per carload. Members would therefore be entitled to subscribe for twenty-five shares of stock, or \$125 worth, for each carload of raisins produced by them in one season. Having formed your association, you would then elect five or seven trustees, to whom should be entrusted the whole management of the packing and sale of the crop, and all members should pool their crop in the hands of these trustees.

Of course, the association must have an office in Fresno, and must employ at a proper salary a man of first-class executive ability, who is thoroughly familiar with the raisin business, to attend to the details of the business. Having formed your organization, elected your trustees and pooled your crop, the next step would be to arrange the finances of the association. I have suggested that we subscribe for \$500,000 worth of stock, which may be paid for in installments and out of the proceeds of the sale of our raisins.

How It Can be Done.—For example: Suppose our crop sold as low as even 2½

cents per pound, clear of all expenses. An assessment of 10 per cent upon this price would be only ¼ of a cent per lb., and yet in the aggregate on 4000 carloads it would amount to \$250,000 the first year, or one-half of the capital stock paid up. The second year, on the same basis, with \$250,000 more added, the whole of the capital stock would be paid in cash, and we would thus have money enough to buy all the packing houses in the country and have plenty of money left to loan at interest to any of our members who might need it. All this can be done without our having to raise a single dollar to be paid in in cash.

In order that you may see there is no mistake in this, let me figure it out for you. We agree that when the Association sells our crop we will allow it to retain ¼ cent per pound, to be applied as a first payment upon the shares of stock each one has subscribed for. Now ¼ cent per pound is equal to \$5 per ton: an average carload is, say, 12½ tons, which makes \$62.50 per carload. Four thousand carloads, at \$62.50 per car, equals \$250,000, and there you have 50 per cent paid on your stock the first year. If, instead of 2½ cents, your raisins sell at 3½ cents, it is, of course, all the easier for you to apply that ¼ of a cent per pound on your stock, especially as it all comes out of the consumer.

This you can do by pooling your crop, and I ask you if such a result as that is not worth the effort to be made to secure it? There is nothing novel about this plan. There is no patent on it. It is one that is being put in operation and successfully carried out nearly every week in the year all over the United States of America in various businesses, and is the one that was so successfully carried out by the wine growers of California; and for the life of me I cannot understand why it has not been proposed and carried out here long ago.

The Campbell Union.

The annual meeting of the stockholders of the Campbell Fruit Growers' Union, according to the *Visitor*, was held at the drier May 11th. The directors reported that the total amount of fruit, green and dried, handled by the Union the past year was 6,661,260 pounds; this was furnished by 107 orchardists. The dried apricots amounted 2,385,523 lbs., the prunes 2,994,388 lbs., and green fruit 602,032. The highest price obtained for apricots was 12½ cents and the lowest 5 cents. The highest price obtained for prunes was 8 cents and the lowest 1½ cents. There seemed to be general dissatisfaction in the manner of testing last year and it was thought best to devise some new way for this year, especially with apricots and peaches. A plan was also recommended to have a number of receipts for cooking dried fruit printed and put in the boxes of fruit. The object of this was to teach the consumer the proper method of cooking the fruit, thereby cultivating a taste for fruit and increasing the market. In the afternoon was the election, which resulted in the following directors for the coming year: Wm. G. Alexander, S. G. Rodeck, G. C. Rodell, J. A. Hamilton and F. Duncan.

The Berryessa Fruit Union.

The annual meeting of the Berryessa (near San Jose) Fruit Growers' Union was held at their drier near Berryessa last week. The union received and handled over 3800 tons of fruit the past season, the apricots alone amounting to 400 tons more than the entire amount of fruit of all kinds received in 1896. This fruit has all been sold at full market price and paid for. An

election was held for seven directors to serve for the ensuing year, which resulted in the re-election of the following named gentlemen by a unanimous vote: T. R. Weaver, D. C. Vestal, H. F. Lord, C. F. Frietag, E. L. Moody, A. W. Hudson and J. R. Kennedy. A vote of thanks was given the board of directors for their careful and satisfactory management of the affairs of the union. The board of directors organized by the election of T. R. Weaver president, D. C. Vestal vice-president and H. F. Lord secretary.

Southern California Walnut Growers' Association.

The walnut growers of southern California met in Los Angeles on Thursday, April 28th, to formulate a plan of organization with a view of sustaining prices at a point which will allow the grower a fair compensation for his labor and investment.

A committee from the different walnut associations was appointed and recommended a central organization which should have full control of all the walnuts grown by the local associations with power to fix prices and sell as they deemed best.

After considerable discussion and some amendments in the matter of representation the convention adjourned to meet on May 18th, in Los Angeles, when it is hoped a complete organization will be formed, as when the several associations compete with one another in price making, nothing but disastrous results can come to the grower.

The following resolutions, offered in large part by Mr. Neff, were adopted:

1. Your committee recommends that a central organization be formed on the general lines of the Santa Clara Fruit Exchange, and recommends the adoption of the following propositions:

2. Local associations shall be formed, composed of one delegate from local associations, and this association shall have control of the selling of the combined product of all the local associations, with power to fix prices.

(Amended to read: "That each association have one delegate in the central board for each fifty carloads or fraction thereof, and for each additional fifty carloads or fraction thereof shall have an extra delegate.") Amendment adopted unanimously.

3. We recommend that an efficient and uniform system of grading be adopted.

4. Orders for walnuts shall be distributed among local associations pro rata, according to production; provided, that where orders come for specific brands of nuts from particular localities, such orders shall be filled and charged against the pro rata due on future orders.

5. Payments shall be made to local associations as fast as sales and collections are made.

6. It shall be the duty of the central association to ascertain the probable product of European and South American countries; the price at which such product can be marketed in New York, and to fix the price of California walnuts so that the foreign product shall not occupy the American market.

The Santa Barbara Walnut Growers.

The annual meeting of the Santa Barbara County Walnut Growers' Association was held last week. Frank E. Kellogg, secretary, in his annual report, said in part:

"The total amount of money received for walnuts (crop of 1897) amounted to \$48,435.05, being more than \$1500 to the member. In settling up with the members of the association, we withheld one per cent of the net sales to cover expenses. After meeting all expenses and paying all claims, we have a balance on hand of \$203.55, and we expect a little more money to add to this, to be collected from the railroad companies on account of overcharges in freight. Hence the entire cost of handling the crop is a little less than one per cent of the net sales. When we consider that another California walnut growers' association,

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whose net sales were more than three times as much as ours, did the business for its members on a one per cent basis, we have reason to be proud of the work of our own association. Although we ordered 9000 sacks at the beginning of the season, they were all sold before the season closed. We think that the prices realized by our association were the best obtained by any association in the State, and there are but few private individuals whose prices will compare at all with ours. Also, our entire product was sold, not a single bag remaining on hand. There have been no withdrawals from the association; and if there has been any dissatisfaction on the part of any member, we have not yet been made aware of it. Our experience thus far seems to demonstrate the fact that walnut growers can achieve the best results by co-operation.

The association unanimously re-elected the old Board of Directors, comprising G. F. Smith, W. N. Roberts, S. L. James, B. M. Bailard and Frank E. Kellogg.

Following the general meeting, the Board of Directors held a meeting at which G. F. Smith was elected president, W. N. Roberts vice-president, Frank E. Kellogg secretary and G. S. Edwards treasurer. W. N. Roberts and B. M. Bailard were appointed inspectors.

Santa Clara Fruit Exchange.

The annual meeting of the stockholders of the Santa Clara County Fruit Exchange was held last week. Two hundred stockholders were present, representing 1324 out of 2152 shares in all.

The old Board of Directors was reinstated, the members being: Philo Hersey, C. F. Wyman, E. A. Wheeler, J. T. Grant, W. H. Wright, A. Y. Chamberlin, O. Stevens, J. A. Wetmore and Noah G. Rogers. President Hersey reported as follows:

Total amount of fruit received, 7,922,567 pounds, and the number of pounds remaining in the warehouse un-

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TRIUMPH STEEL RANGE into every section of the United States, depot free of charge our highest grade Steel range for \$25.00. The regular retail price is \$50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 13 inches high, 17 inches wide and 21½ inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. WM. G. WILLARD, Manufacturer, 113 & 115 N. Second St., St. Louis, Mo.



sold, 101,000; total cash paid out, \$329,391.51; cash received, \$335,594.50, leaving a balance of \$6202.99.

The corporation debt of \$5000 still stands. The improvements and repairs have been all paid from the year's business profits, and the corporation, as such, is in better standing than ever before. Slight repairs only will be required for the coming year. If the general favor with which our work is regarded shall continue increased warehouse facilities will be required after another season. The needed facilities will be a building in which all boxes may be stored, boxes made and the processing and box-packing of fruit be done. Give the institution all it can do for a single season and I assure you that a suitable building 150x180 feet can be constructed from the savings of that season alone.

Your president and manager is made glad by the cordial courtesy and co-operative spirit manifested by the very large majority of the 400 contributors to the season's business. They have often trusted him with balances due them, which has been of convenience we gratefully acknowledge. When all the growers shall come to understand that we are here in the struggle for their interest, with no purpose whatever of misleading or misrepresenting, they will be greatly profited by our efforts.

The year's business has been very satisfactory to those having it in charge.

Then came the report of the secretary, Noah G. Rogers, after which the Directors organized and elected Philo Hersey president, C. F. Wyman vice-president and Noah G. Rogers secretary. Colonel Hersey was also elected manager.

The Next State Fair.

The State Board of Agriculture met Monday in Sacramento for the purpose of considering reports of the various committees. The report of the Premium List Committee was the most important, inasmuch as it contained a revision of the entire premium list for 1898, making such changes as were deemed advisable. The principal change was to have expert single judges in all classes where practical, and the secretary was directed to correspond with several experts of the various classes of live stock.

The admission rate to the Pavilion was reduced to 25 cents. This change was made at the earnest solicitation of many exhibitors, and considering the condition of the times, the board deemed it prudent to make the change. The admission to the Park will be 50 cents, as heretofore.

Fine Tract of Land for Sale.

Over 520 acres of land, consisting of three farms considerably improved in middle western Oregon, only four miles from railroad, connecting with steamers for San Francisco and Portland, Oregon. Two thousand apple trees, late varieties in bearing. Plenty cold springs and celebrated white sulphur springs on property. Fine trout stream and river runs through land; plenty of water for any kind of machinery 9 or 10 months in the year, with lots of fir timber suitable for rough lumber on the property. Irrigation unnecessary and crops never fail. Well furnished 7-room house, with water piped from spring. Good blue stone quarry. Range good for cattle and about 350 sheep. Schoolhouse on property. Land is just right for five or six families, and must all be sold together. Will be sold cheap on easy terms to responsible parties. Crop all in, with plenty timothy, red clover, oats, potatoes, and garden; 8 cattle, 40 sheep, farm implements, etc. Owner wishes to sell, as he lives 400 miles from it and cannot give his time to it. For further particulars address as below. No one need apply who is not willing to first examine the property. References given and required.

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Patrons of Husbandry.

From Stockton Grange.

TO THE EDITOR:—Stockton Grange sends greetings through the columns of the RURAL PRESS to the Patrons of Husbandry throughout the State.

Silence seems to prevail among the Granges, and we would like to be informed as to the reason thereof. Those members who were at Santa Rosa last State Grange meeting know that there was an election of State officers. What has become of them? What are the Granges doing? These questions have been asked, not once, but often: Have we State Grange officers? If so, why do we not hear from them in regard to the welfare of our Order? There are a number of good writers among the members in the different Granges, and a communication once in a while would be very acceptable. Come, Brothers and Sisters, wake up, and let us hear from you—something to show you are alive!

Stockton Grange keeps the even tenor of its way—nothing very exciting—plain, everyday facts engaging the attention of its members. Since the first notes of the war, however, our Grange has put on its fighting armor, and news from the seat of war is eagerly sought for and discussed by every member. But it is rather one-sided, as there is no one to take the negative side of the question. Our brave Sisters are as patriotic as the Brothers. Our Worthy Chaplain said in Grange that she wished she was a man that she could go and fight.

We have also discussed the action of Congress in relation to the speedy construction of the Nicaragua canal, and have appointed a committee to draw up resolutions favoring the same, as the need of the canal is now more apparent than ever, as demonstrated in the case of the battleship Oregon.

We greatly miss the presence of our worthy Sister, W. L. Overhiser, who met with a severe accident about four weeks ago. Brother and Sister Overhiser were coming to town, and the horses in some way became frightened, overturning the carriage. Sister O. had her right arm broken, her shoulder and right side of head considerably bruised. She is still confined to her couch, but, we are happy to state, is fast on the road to recovery, and sends fraternal greetings to all friends and Patrons. Bro. O., fortunately, escaped with a few bruises. Our outing meeting was to have been held at their home on the 12th, but, owing to the Sister's condition has been postponed. That day being also her birthday, we intended celebrating by a surprise, of which Sister O. knew nothing. Some of our worthy Sisters, however, visited her on that day with birthday greetings. N. H. R.

Stockton, May 16.

Coast Industrial Notes.

—The Union Oil Co. is putting up a 35,000-barrel storage tank at Coalinga, Cal.

—The Tubbs Cordage Company announce an advance on manila to 8½ cents, and on sisal to 7¼ cents.

—The railroads have given California stockmen half rate on cattle, and it is estimated that 50,000 head will be shipped East.

—The horse cannery at Linnton, Or., where last year 9000 horses were slaughtered and canned, will shortly resume operations.

—Redwood shipments for April were 14,000 M. feet, 12,000 of which went to San Francisco and southern California; the remainder to Hawaiian Islands and Europe.

—The Canadian government has contracted with the Boston & Alaska Transportation Co. for the delivery of 400 tons of freight and 200 troops into the Yukon district of the Northwest Territory.

—While the manager of the Crockett sugar refinery at Stockton, Cal., cannot get labor for the beet fields, the Volunteers of America are trying to raise \$200 in that city to enable that organization to provide meals and beds for tramps.

—The occupation of the Philippines by American forces will greatly augment United States exports. Trade follows the flag. In February, '98, according to the official report of the Bureau of Statistics at Washington, the United States imported from the Philippines \$186,358 value of merchandise, of which \$113,328 was carried in American ships and \$73,030 in British vessels. American imports from the Philippines for eight months

ending with February were \$2,240,176 value, and our exports to the islands \$69,235.

—The Santa Fe Railroad Co. is contemplating closing the gap between Mohave and Bakersfield, Cal., and forming a connection with the San Joaquin Valley road. The route of the extension would probably be from Johannesburg through Walker pass and down the canyon of Kern river to Bakersfield.

—Bakersfield, Cal., was reached by the San Joaquin Valley road last week. For the present that point will be the southern terminus of the San Joaquin Valley railway, which will be operated from there to Stockton. There will remain to be built the interval between Stockton and Point Richmond. Nearly two years will yet be occupied in building the Valley road from Bakersfield to San Francisco bay, on account of the long tunnel. Thus far nearly \$4,500,000 have been expended, and about \$3,000,000 more will be required, making a total of \$7,500,000. To meet it are the \$2,500,000 of paid-up shares and the authorized issue of \$6,000,000.

—The California Development Co. is credited with intent of another effort to irrigate the Colorado desert. It is estimated that the entire system can be constructed for \$300,000, and that a canal can be built large enough to carry sufficient water to irrigate 1,000,000 acres of land. No pumping works will be necessary, the canal having throughout its entire length a natural fall of 330 feet from the point where the Colorado river is tapped to its extreme northern limit in Riverside county. The lands to be reclaimed are situated in San Diego and Riverside counties, and in the northern corner of Lower California. The center of the tract is about 100 miles from the city of San Diego. The acreage of first-class lands reclaimable by the proposed system of canals is given at, approximately, 1,600,000—900,000 being in the United States.

Bad Digestion, Bad Heart.

Poor digestion often causes irregularity of the heart's action. This irregularity may be mistaken for real, organic heart disease. The symptoms are much the same. There is, however, a vast difference between the two: organic heart disease is often incurable; apparent heart disease is curable if good digestion be restored.

A case in point is quoted from the *New Era*, of Greensburg, Ind. Mrs. Ellen Colson, Newport, Ind., a woman forty-three years old, had suffered for four years with distressing stomach trouble. The gases generated by the indigestion pressed on the heart, and caused an irregularity of its action. She had much pain in her stomach and heart, and was subject to frequent and severe choking spells which were most severe at night. Doctors were tried in vain; the patient became worse, despondent, and feared impending death.



A Case of Heart Failure.

She was much frightened, but noticed that in intervals in which her stomach did not annoy her, her heart's action became normal. Reasoning correctly that her digestion was alone at fault, she procured the proper medicine to treat that trouble and with immediate good results. Her appetite came back, the choking spells became less frequent and finally ceased. Her weight, which had been greatly reduced, was restored, and she now weighs more than for years. Her blood soon became pure and her cheeks rosy.

The case is of general interest because the disease is a very common one. That others may know the means of cure we give the name of the medicine used—Dr. Williams' Pink Pills for Pale People. These pills contain all the elements necessary to give new life and richness to the blood and restore shattered nerves.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING MAY 3, 1898.

- 603,421.—WHEELED SCRAPER—W. C. Bradford, Arbuckle, Cal.
- 603,280.—LUBRICATING SHAFT BEARINGS—O. F. Cook, San Jose, Cal.
- 603,319.—SEPARATOR AND CONCENTRATOR—Crowell & Gale, S. F.
- 603,425.—GOVERNOR—C. Cummings, Oakland, Cal.
- 603,322.—OIL SMOKE—E. H. Driggs, Berkeley, Cal.
- 603,562.—NECK YOKE—W. E. Haight, McMinnville, Or.
- 603,531.—BICYCLE BRAKE—F. H. Heath, Tacoma, Wash.
- 603,531.—DRILLING TOOL—F. W. Mason, Aberdeen, Wash.
- 603,281.—BICYCLE—T. P. McDermott, Portland, Or.
- 603,455.—PIPE BINDER—C. L. Pinney, Los Angeles, Cal.
- 603,579.—STEP LADDER—O. Richardson, Clipper Gap, Cal.
- 603,517.—GAME COUNTER—J. Schneider, S. F.
- 603,392.—WOODEN PIPE—W. J. Woodward, National City, Cal.
- 28,510.—DESIGN FOR DOOR LATCH—R. H. Martens, Colfax, Wash.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.



Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

SEPARATOR AND CONCENTRATOR.—Charles E. Crowell, Stella, Cal., and Merritt F. Gale, San Francisco, Cal., said Gale assignor of entire interest to said Crowell. No. 603,319. Dated May 3, 1898. This invention relates to an improvement in that class of machines known as ore washers or separators, in which granular substances and minerals of different specific gravities are separated by agitating them in a current of water while enclosed in a suitable receptacle. The invention consists of one or more series of boppers situated one below the other, so that the discharge from the uppermost will be delivered successively into the bottom of the next succeeding hopper, said hopper being of gradually increasing diameters, having upwardly diverging sides. Inclined overflow, directing lips surround the upper parts of the hoppers and discharge into annular surrounding troughs, and pipes connect these troughs successively with the bottom of the next succeeding hopper, so that an upward flow at a gradually decreasing rate takes place in each of the hoppers. In connection with these are inclined cylindrical screens, generally intermediate between one or more series of the hoppers, so as to receive the overflow from the preceding hopper and deliver it into the following one. Final discharge sluices and preliminary water and pulp receivers are employed with means for regulating the water supply and a device for diverging the supply of pulp alternately from one series of boppers to another, so as to allow the idle one to be cleaned up.

WHEELED DUMPING SCRAPERS AND GRADERS. Walter C. Bradford, Arbuckle, Cal. No. 603,421. Dated May 3, 1898. The object of this invention is to provide a means whereby earth can be scraped up and the pan raised and lowered and discharged at any desired point with great facility. It consists of a bisecting pan fastened to a frame carrying a scraper or cutter at its forward end, links by which the pan is suspended, and a lever so connected as to actuate the rear portion of the pan to open or close them and a spring pressed lever by which the pan may be raised or depressed. The scraper has share or cutter in front, and the earth gathered by it is delivered into the receiving pan behind, and the pan when full may be raised and transported to any desired point by means of the wheels upon which the apparatus is mounted, after which the sections of the pan are opened away from each other so as to discharge the load.

GOVERNOR FOR AIR COMPRESSOR.—Charles Cummings, Oakland, Cal., assignor to the Pneumatic Power Co., San Francisco, Cal. No. 603,425. Dated May 3, 1898. This invention relates particularly to that class of air compressing machinery, in which two unequal pressures of air or other gas or fluid are employed both above the normal atmospheric pressure and circulating in a closed system. The present invention relates to a governing apparatus for automatically controlling the action of the air-compressing machinery. It consists essentially of a means for automatically keeping an arithmetical ratio or a constant difference of pressure between the two unequal pressures in an apparatus, in which these pressures are both above the normal atmospheric pressure and the means employed acts to vary the speed of the compressor so that it will generate more or less energy for the work to be done by the driven machine as may be required. The means employed consist of a governor which comprises connected pistons of equal pressure areas acted upon by the unequal pressures, means for counterbalancing the difference in pressure and holding the pistons in equilibrium and means operated by the connected pistons for controlling the compressor driver medium. A weighted lever is connected with and operated by the pistons to counterbalance the difference in pressure and hold the pistons in equilibrium and a valve controlling the supply pipe which leads to the motor actuating the compressor, is connected with the weighted lever and regulated by the movement of the governor pistons. A low pressure pipe leads from the low pressure conduit to the low pressure end of the governor and a high pressure pipe leads from the high pressure conduit to the high pressure end of the governor. Changing the initial pressure of air to be compressed varies the ratio of the initial to the final pressure and the efficiency of the system is thereby increased or decreased according as the initial pressure is made greater or less.

—A car of beeves were recently shipped from Benton county, Or., to Victoria, B. C. The average weight was 1600 pounds. Four cents a pound was the price paid, or \$64 a head.

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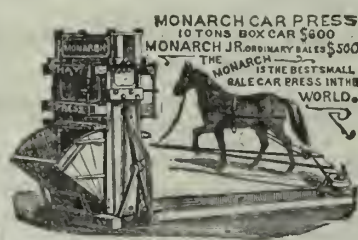
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 22

SAN FRANCISCO, SATURDAY, MAY 28, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

Sugaring Off in the Beet Sugarie.

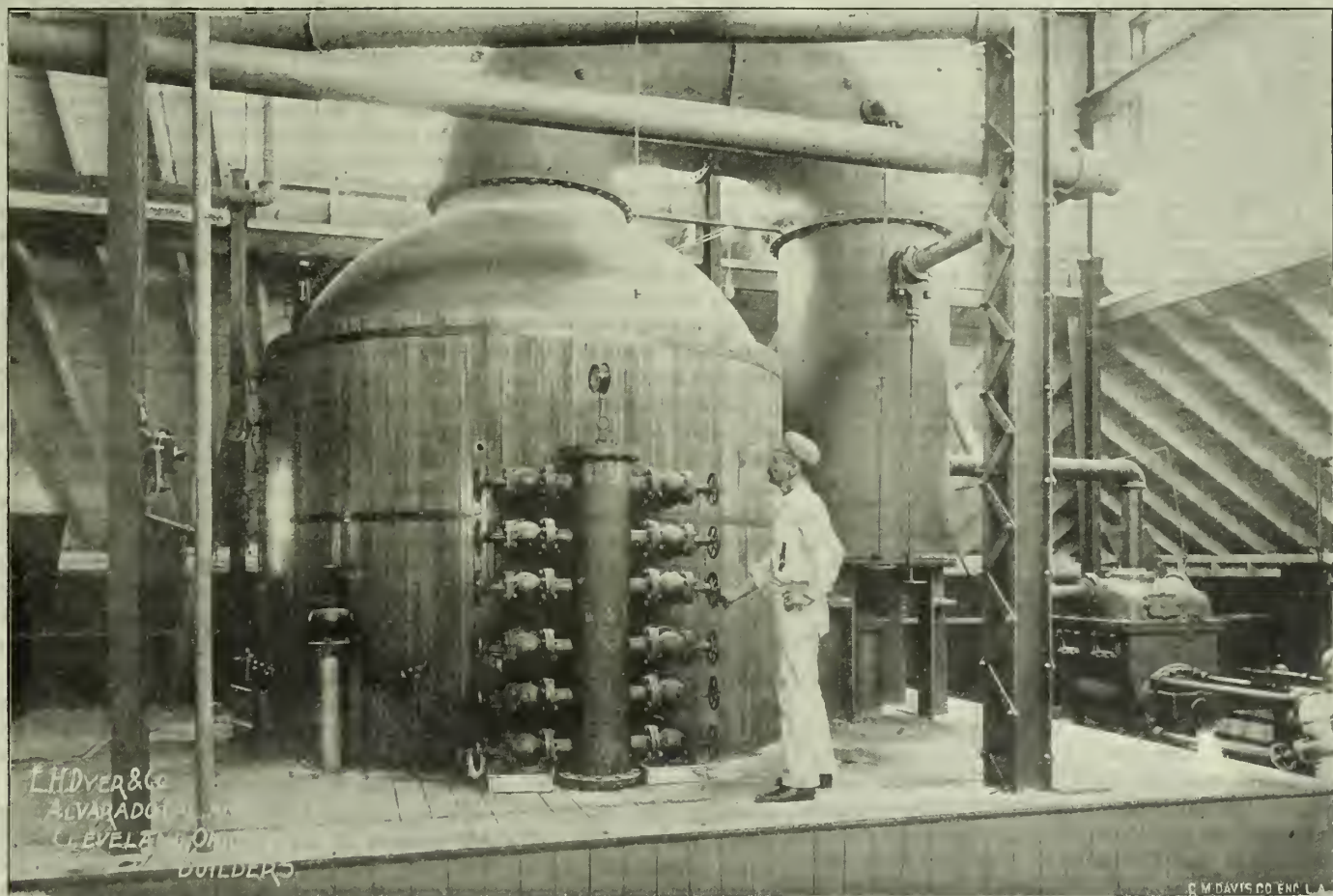
In our walk through the beet sugar factory we have already advanced to the point where the partly evaporated juice had been drawn from the quadruple-effect evaporators, and had its last run through the mechanical filters. It is only after all the processes that we have already seen have been carefully gone through that the syrup is pure enough to be given the form known as sugar. This is accomplished in the vacuum strike pan shown in the upper picture on this page. This pan is a closed cast iron vessel about 11 feet in diameter and 14 feet high, and contains about thirty-five tons of "meloda," at the mixed sugar and molasses are called. In the lower part of the strike pan are a number of copper coils, through which the steam passes without coming in contact with the boiling mass. The vapor rises to the condenser and the non-condensable vapors are drawn off by a pump. During the operation a vacuum is maintained in the apparatus, the mass boiling at a low temperature, which prevents burning. There are quite intricate operations going on in the vacuum pan, alternate condensing and

introducing fresh juice until the crystals are enlarged to their fullest size until the pan becomes full. The size and hardness of the crystals depend upon the skill of the operator in regulating temper-

ature and the time of adding fresh juice. It is a very nice process, and the operator is constantly at work watching heat and gauges and sampling and turning valves, as the picture shows him.

When the operation is complete the whole contents of the pan are concentrated until they comprise 75 per cent of sugar and 25 per cent of molasses. The steam is then shut off, air admitted, a large valve at the bottom is opened and the entire mass of thirty-five tons is run out as rapidly as possible before it has time to solidify. It all falls into a large iron tank with revolving arms constantly in motion. This is called a mixer. It is seen at the top of the lower engraving.

Beneath this long riveted tank are the eight centrifugals. They consist of circular baskets surrounded by safety curbs. The baskets are lined with a finely perforated brass screen. About 500 pounds of the mixed sugar and molasses are dropped into each centrifugal, which is then given a high velocity, which throws the mass against the perforated side; the molasses, passing through, strikes the side of the curb, down which it flows, to be taken away through a pipe at the bottom.



THE VACUUM STRIKE PAN IN WHICH THE THICK SYRUP IS BOILED DOWN AND GRANULATED.



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E. J. WICKSON..... Horticultural Editor.

San Francisco, May 28, 1898.

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The Week.

The progress of the war promises to give Californians one of the busiest summers ever known. Trains are coursing over all the overland lines, bringing thousands of citizen soldiers from all parts of the country to debark at San Francisco for the campaign in the Philippines. The streets of San Francisco are unusually thronged, and beyond the old city of brick and frame structures new cities of canvas are continually assuming increased dimensions. The city streets are full of music as shiploads of men are going out and trainloads coming in. The whole population is charged with patriotic fervor, and nothing is too good to be done for a soldier. It is a good thing to have the people's blood stirred once in awhile and to give them occasion to remember that there is something higher than individual gain or advantages, and that is the honor and welfare of the country.

Another important, though narrower, conception also stirs the California blood, and that is the enforced appreciation of the fact that our State is nearer the center than the circumference of the country, and that through the whole future of the United States as a nation our grand commonwealth will hold more important relations than ever before to the evolution of the American idea throughout all the peoples of the globe. From our shore the light of free institutions and popular enlightenment will shine out for the elevation of all Pacific countries, and from our ports the votaries of commercial, industrial and social progress will sail forth. Passing events will show to all Americans, as never before, the importance of California in national advancement.

In trade the tendencies noted last week have been farther developed. There is a bear movement in wheat both in Liverpool and in California, based upon claimed crop prospects which we believe exaggerated. There does not seem to be real reason for the decline of 5 to 7½ cents per cental. On the other hand, the drop in barley, hay and millfeeds is reasonable in view of the less requirements we shall have for such supplies and the large contributions of them from outside. Livestock is unchanged. Store hogs are in less supply, for the chance of feeding them improves. Hides are strong and promising. Butter and cheese are weaker; eggs are unchanged, but held there by large Eastern supplies. Dried fruits are firm and unchanged.

The Advantages of Irrigation.

Californians generally will learn more this year about the advantages of irrigation than during any previous decade of our agricultural history. Great advances have been made in the art in the past, it is true; deserts have blossomed, huge reservoirs have been constructed and elaborate systems of distribution have been put in successful operation, land values have been advanced 10,000 per cent above their arid valuation, and California has stood for twenty years in the eye of the world as an exemplar in irrigation engineering, financiering and horticulture. The casual observer might doubt it possible that there might be anything greater which California might attain in the appreciation and employment of irrigation, and yet we count it greater than all these that Californians generally should have come to regard the advantages of irrigation as they do at this moment through the experiences of the present year. We fully believe that more will be realized in the way of prosperity and development through these experiences than has been secured through all the dash and enterprise of the grand accomplishments of the past.

The popular conception of the standing of irrigation as an agricultural art has undergone a radical change during the last few years, and in this newer, truer and broader conception California is not conspicuous as a leader, though the conception itself doubtless owes its incentive and initiative to California achievements. The superiority of California products as displayed at great Eastern expositions and offered in profusion in Eastern markets, the demonstration to the Eastern mind that, either by her superior cultivation or more abundant use of water, or by both combined, California growers defied successive months of aridity, while a few weeks of drouth destroyed Eastern crops and occasioned loss of millions of valuation, aroused Eastern producers to enquire into their methods and policies and prompted Eastern experiment stations to undertake systematic investigation into soil moisture and its relations to cultivation and plant growth, and to pursue field cultures with different amounts of water. The results have been two fold, viz.: a better understanding of water content of soils and water movement, and of the needs of the plant to attain its most profitable growth and production. We find, then, that a demonstration has been reached that in humid climates irrigation supplies are not alone a surety against vast losses during short but severe drouths, but that irrigation as supplementary to summer rains may be made very profitable. Such demonstrations, both by station experts and practical growers in many regions east of the mountains, have created there a strong and growing sentiment that even for what are called humid climates irrigation may be a rational and profitable recourse.

California has been learning of late that it is not alone the so-called "irrigated regions" which are profited by irrigation facilities. Fruit districts which have long scouted the suggestion that irrigation was necessary for deciduous fruit trees, have during the last few years found that water, in addition to the rainfall, was very profitable, either to enable large, bearing trees to produce larger fruit, or to maintain in full vigor their later summer growth, which ensures the following year's production. It has also been widely demonstrated that a tree which is adequately supplied with water, no matter whether it be directly from the clouds or through the irrigating stream, yields fruit of better size, aroma, flavor and carrying quality than a tree which, from any cause, falls even a little short of an adequate supply. In California, then, there has come into vogue a truer conception of the advantages of irrigation to enable a tree to do its best work, and unquestionably the same is true of many plants grown for field crops.

But these lessons are only preparatory to the great lesson which has been widely learned this year, and that is not only that he who has irrigation water at his command is forearmed against weather-freaks and consequent grievous losses, but that thousands of people really have irrigation supplies at hand and available who have thought hitherto that the possession of water would signify an appalling amount of engineering, organizing, financiering and taxation. Hundreds have found that their land was merely the cover of a limitless reservoir, and others that ad-

jacent streams could be very cheaply thrown to elevations from which the water would flow over their lands. The use of the pump is only just beginning in California, though we have had for years as good and capacious pumping machinery in use as the world can show. The experience of the present year, as now being shown from week to week in our columns, makes it clear that irrigating pumps will figure in our agricultural future to an extent beyond any anticipation. The capacity of pumps, their ease and cheapness of operation in this land of oil wells, and of ponderous waterfalls whose power can be transformed into electric energy, is giving some warrant to the opinion that in many places water can be lifted from below more cheaply than it can be brought long distances by ditch. The recognition of this fact promises to largely increase our irrigated acreage and our independence of the accident of rainfall, even where great enterprises for water acquisition and distribution are not at present practicable. This means that vast areas of land in the interior valley will be brought and held to a maximum production of grain year after year and will escape the fluctuation between feast and famine which the present rainfall-farming in such parts of the State signifies.

The general lesson of this year, fortified by the demonstration by experiment of the capacity of crops for profitable use of ample moisture, is evidently conveyed in two words: *get water*. Advance well planned and honestly conducted irrigation enterprises. Take up at once discussion in all economic organizations as to the relations of the State to the article of water and its uses. Invoke the most acute legal talent to prepare for enactment by the next Legislature such acts or amendments of acts as shall ensure the use of water to those who can claim constitutional title to that use and shall encourage proper organized and co-operative action to secure the benefits of that use. It is time now to prepare to correct any errors in this line which have been made in the past and to place the whole matter upon a better foundation of right and justice than has yet been entered upon. And while this is being done let the fullest inquiry proceed into the methods, materials and cost by which adjacent water to which the land has undisputed title may be secured in the largest measure. The RURAL PRESS has the keenest possible interest in this matter and welcomes discussion and suggestion on every phase of the subject which may be counted of public interest.

A RIDICULOUS fright is more or less prevalent in San Francisco and vicinity over unwarranted reports that strawberries are dangerous because growers are using poisonous insecticides on the plants. As we understand it, such an impression was created by a case of illness after eating the fruit and sensational reports of the same in the papers. No doubt the person became deathly sick, and that he ate strawberries, but that proved nothing, for both these things are occurring every day with or without any relation to each other. The reports that poisonous applications are made to the plants are not true. Occasion has not arisen, in the chief producing regions at least, for such application, and there is no more nor no less danger attending the use of sound berries than there has always been. And yet the senseless reports are industriously circulated and berry growers right in the midst of their harvest are suffering from a wild boycott put upon their product by uselessly frightened people. The Watsonville growers are doing all they can to protect their crop by assembling and making public declarations of the fact that no poisons are used. All other growers should do the same. It will quiet the baseless rumors sooner than to let them die out of themselves, as they would surely do, but not until growers are robbed of returns to which they are justly entitled.

Among the exhibits at the Omaha Exposition, which is to open in June, will be three carloads of cancelled mortgages. This display will offer a wonderful tribute to the improved financial condition of the country and the increased prosperity of our agricultural industries.

FRANCE has suspended the wheat duty from May 4th until June 30th, inclusive. After July 1st the full rate of 7 francs will be charged.

QUERIES AND REPLIES.

Charcoal as a Hygienic Agent for Hogs.

TO THE EDITOR:—How can I keep the hogs at my dairy in good health? My superintendent thinks that charcoal would be the right thing. If he is right, please tell me how much to give them.—DAIRY PROPRIETOR, San Francisco.

Unquestionably charcoal is a valuable hygienic agent for hogs. It is a corrective, and certainly prevents some diseases arising from disordered digestive functions. Wood ashes act similarly, or at least minister to similar wants. Both charcoal and ashes are freely used by our best swine growers.

There is no need to fix quantities. The best way is to keep both substances within reach of the hogs, and allow them to consult their own tastes and needs. If you use commercial charcoal, throw out half a sack at a time in a clean, dry corner, and replace when used up. All the wood ashes from the ranch fires can be used in the same way. If you have waste wood or rubbish burn it in the hog lot and wet it down before entirely consumed, and the hogs will take care of it.

Mildew on Roses and Grape Vines.

TO THE EDITOR:—What is best to use to prevent mildew on plants? My rose bushes are filled with it. Also, is it really necessary to sulphur grape vines? I. THEIS, Penryn.

If you have the common rose mildew—a whitish, powdery deposit on the young leaves and stems—the most easily applied remedy is finely powdered sulphur, dusted upon the plants. In addition to the remedy, the rose is assisted to resist the mildew by giving it extra good treatment with water, manure and cultivation to keep it growing vigorously. Some varieties will not mildew much if thus well treated; others will suffer in spite of the best treatment. The easiest way to escape mildew in a small garden is to select varieties which are not much troubled with it, and reject the others. In this way you can get nearly all colors without worrying about mildew. It is necessary to sulphur grape vines if they mildew in your locality. Some interior situations are so little affected with vine mildew that no sulphur is used. In the coast valleys and the lower moist lands of the interior, sulphur has to be applied several times during the growing season.

The Pringle Apricot.

TO THE EDITOR:—I send a package of apricots for identification. The tree is a vigorous grower, one of the largest in our orchard, and this year has more fruit on it than any other apricot tree. It has ripened first this year. Some growers call it the Newcastle, but it does not seem to agree with the California variety of that name.—A. J. McCLATCHIE, Phoenix, Arizona.

The apricot you send is the Pringle. The Newcastle is not only much larger but it has a more conventional apricot form: more flattened, more deeply sutured, etc. Because of these characters it has displaced the Pringle almost entirely, for it ripens at about the same date, and it was only its earliness which held the Pringle in favor so long. Both varieties are strong growers and disposed to overbear.

Growing the Logan Berry.

TO THE EDITOR:—I have just set out seventy-five potted plants of Logan berry and I wish to know something about handling them.—W. C. MACFARLANE, Hanford.

There has been as yet no demonstration as to what is the best way to handle the Logan berry on a commercial scale. In garden practice our own experience would favor the trellis, for the canes run out to great length and during the following summer bear on short laterals the whole length of these canes, even though they be 12 feet or much more in length. Evidently the canes should be run singly on wires so as to facilitate removal of the old canes after their fruiting. If the new growth is allowed to intertwine with the old it is a great undertaking to separate them for the removal of the old. There also seems to be a disposition to bear a second time on the old cane: new laterals starting at the bases of the laterals which bore the previous year and then died back to the cane. Probably in commercial practice this offer could be rejected. Where the trellis system is objectionable because of cost and

obstruction to cultivation both ways, probably a high stake could be used, but this would sacrifice a large amount of bearing wood unless the new growth was carefully topped and new lateral canes looked after during the summer. The crop is so heavy and the cane so pliable that gathering up and tying of these laterals would have to be constantly looked after. Mr. James Waters of Watsonville, the first grower of Logan berries as a market crop, had eight acres of the fruit with the canes all lying on the ground, and this may, after all, be the most profitable way to proceed where dry ground may be expected all summer as in California. We shall be glad to hear from all growers of this fruit as to their methods.

Smears Distasteful to Rabbits.

TO THE EDITOR:—Would you kindly let me know if there is any preparation to be applied to trees to preserve them from the ravages of rabbits—some safe and certain preventive—with directions how to apply it?—D. THEOPHILUS, West Palmdale, Cal.

Some growers report favorably upon such applications. Various materials have been used. Commercial aloes, one pound to four gallons of water, both sprinkled on the leaves and painted on the bark, gives a bitter taste which repels rabbits. A tea made of quassia chips is said to produce the same effect. Rancid grease, liquid manure, putrescent flesh and blood have been widely approved as a daub for tree trunks. A common method is to shoot a rabbit, open and rub the tree trunks with the remains, and many have pronounced it effective. Be careful not to use anything like tar or heavy oil upon the bark of trees.

When to Cut Hay.

TO THE EDITOR:—At what stage should barley be cut in order that it may make the best possible hay? I have never cut it for this purpose before and on enquiring among my neighbors I find the greatest diversity of opinion on the subject. I apply to you as the only authority I can safely trust.—C. T., Santa Cruz.

It has been shown by experience that the time to cut cereals for hay is about midway between the milk and the dough—that means, that the milk which is found on squeezing the young kernel must be considerably thickened, and at the same time not thick enough so that the substance which issues by the same pressure is like dough. There is naturally some difference of opinion among growers on this subject, because it is a matter which may not be definitely settled by description, but must be determined by judgment and experience. Probably the people you have consulted differ rather in their description than in their conception of the state or condition which they wish to describe. If the grain is cut too early—that is when the kernel contains nothing but milk—part of the nutritive substance is lost because the straw has not reached sufficient maturity; on the other hand, if it is left until the kernel becomes like dough, too much of the nutriment has gone to the grain. The secret of success lies in taking it just midway between these two extremes—that is, when the plant has taken all that it can from the soil and at the same time has not transferred the nutriment to the kernel and hardened the tissue of the straw. It is unquestionably true that most hay is cut a little too late; and that greater weight and greater amount of nutriment can be obtained by cutting a little earlier than is usually done. In the case of barley it is also desirable to cut a little earlier than wheat, because as the plant matures the beards become stiffer and more likely to injure stock in feeding.

Blades of Grass.

TO THE EDITOR:—What is the best way of getting rid of the enclosed grass? The more I disturb it the more it seems to spread; and as it is in the orchard, it is not desirable.—SUBSCRIBER, Guinda, Cal.

"Subscriber" sent only a few blades of grass without root or head. Any specimen should contain root, blade and blossom. To determine a grass from its blade alone is about as difficult as to identify a man by his ears—it can sometimes be done, but not often. "Subscriber" also forgot to advise us of his full name. We often wish to address enquirers by mail; in this case we should have written that the specimen was inadequate.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 23, 1898.

By W. H. HAMMON, Station Director.

Rain fell in generous amounts over the northern portion of the State on the 22nd, and light showers occurred on other dates in the northern and extreme southern parts of the State. From San Francisco northward the rainfall was much above the normal; from San Francisco southward to the Tehachapi, below the normal. The week has been unseasonably cold, the average temperature, with one exception, being from 3° to 9° below the normal. The cold weather and rain interrupted haying and some damage was done to cut hay; but the benefit to wheat, feed and fruit more than compensates for damage to hay and cherries. Some grain that would have been cut for hay will now be saved for grain. Summer-fallow will yield a fair crop in some sections, but winter sown is generally a failure. Alfalfa is doing well. Cherries were not damaged as much as expected and shipments are now being made. Fruits generally are in good condition. Hops are thrifty and promise well.

SHASTA.—Heavy rain was of great benefit to late grain and fruit trees.

TEHAMA.—Hay damaged by rain. Cool and damp weather good for fruit and late grain, also garden truck. Rain greatly helped range feed on high lands.

BUTTE.—Light rainfall was of little benefit. Temperature 15° cooler than this time last year. Feather river rose 6 inches. Haying about over. A large acreage of grain that was to have been cut for hay will now be saved for grain.

YUBA.—Showers and cool weather have greatly benefited cereal and fruit crops. Better reports cause more hopeful feeling. Haying season interrupted without damage. Thrifty condition of hops indicates full yield and early ripening.

YOLO.—Damage to cut hay not as heavy as reported. Grapes doing well.

SACRAMENTO.—Crops look well. Cool weather beneficial. Fair crop of barley on bottom lands. Hop vines show improvement.

SOLANO.—Rain and cold weather have been beneficial to all fruit crops. Rain did little damage to cherries or hay. Shipping cherries. Wheat maturing well; summer-fallow will yield fair crop.

PLACER.—Rain was helpful for fruit and a large yield is now promised. Apricots and berries retarded some; bulk of cherry crop shipped; blackberries and raspberries coming in slowly.

EL DORADO.—All crops look well. Prospect of big crop of wine grapes.

SAN JOAQUIN.—Rain damaged cut hay, but benefit to wheat will offset the damage to those having hay and wheat. Onions coming on.

STANISLAUS.—Light shower Saturday night; no damage to hay. Growing crops look well inside canal limits.

MERCED.—What grain there is, is filling well. Rain last Saturday night will do grain no particular good. Summer-fallow will produce fair crop. Making hay. Fruit doing well.

FRESNO.—Grain crop doing well; fair crop in irrigated districts. Haying last week; light crop. Light yield apricots and quinces. Grape vines looking well.

KINGS.—Heavy rain on the 15th in the southern part of the county of great benefit to some wheat on the border of Tulare lake, but most of the grain in the county beyond help. Much grain hay will be saved and alfalfa doing well. Prunes falling.

TULARE.—Plenty of water for irrigation; ditches running full. Vines look well and promise a good crop. Grain light but doing well. Orchards in good condition. Harvesting on a small scale in the foothills.

KERN.—Light showers in foothills Sunday.

LAKE.—Rain has delayed hay cutting for a time, otherwise has done good. Ground in good condition; many doing their spring plowing. Vines and fruit trees doing well; promise of a good grape year.

SONOMA.—Rain greatly helped all late crops, especially hops and corn. Prunes unusually fine. County will have the largest crop of hay and grain on record. Cherry crop short and ripening slowly. Berries ripening slowly, but greatly improved. Corn and hops making good progress.

NAPA.—Rain benefited fruit and grain. Cherries but little injured. Good crop of grain, hay and fruit.

ALAMEDA.—Vegetables doing nicely. Fruit doing well; fair crops, except apricots. Grain and hay show improvement. Grapes and beets doing well.

SANTA CRUZ.—Rain benefited grain, beets and vegetables. No damage to hay. First car of cherries shipped.

SAN MATEO.—Fruit trees looking well. No apricots or almonds. Haying in full blast. No damage by rain.

MONTEREY.—Prospect for some hay, and, with more showers, some grain. Cool and cloudy.

SAN BENITO.—Larger peach crop than anticipated. Apricots a failure. Prunes fair. Rain benefited fruit and hay.

SAN LUIS OBISPO.—Rain has assured summer crops; apricot and peach crop will be light; late sown grain will make hay and probably some grain will be threshed.

VENTURA.—Heavy rain of great benefit to fruit and nut trees. Estimated that over 500 acres will be planted to beets. Beans, corn and pumpkins will be planted. Rain helped beets already planted.

LOS ANGELES.—New crop of oranges promises to be very good, especially Navel. Deciduous fruits better than expected; fair crop of peaches and apricots. Considerable hay harvested. Light crop of corn looking well.

SAN BERNARDINO.—Rains revived feed and late sown grain and benefited trees. Since last rain some grain and hay expected.

ORANGE.—Enough hay for home use. Walnut trees looking well; fruit crop promising.

RIVERSIDE.—Cool and damp. Grain crop very light, almost too far along to be helped much.

SAN DIEGO.—Olives, prunes, peaches and apples promise well, while apricots are a failure except in scattered localities. Rain was remarkably heavy in mountains and foothills, varying from 3 inches on Cuyamacas to .03 inch on coast. Before this rain many ranches had no hope of making hay, and now a good yield of grain from the same fields is assured. Seasonal rain deficiency is 5.31 inches. Near Otay haying is in full blast; rain is said to have done as much harm to hay as it has good to other things.

The following data for the week ending 5 A. M., Wednesday, May 25, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Last Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | .88 | 32.97 | 40.24 | 45.50 | 42 | 58 |
| Red Bluff..... | .90 | 14.28 | 24.21 | 25.31 | 46 | 90 |
| Sacramento..... | .14 | 10.15 | 17.28 | 20.59 | 46 | 84 |
| San Francisco.. | .07 | 9.13 | 23.21 | 23.08 | 47 | 63 |
| Fresno..... | T | 4.79 | 10.52 | 9.70 | 48 | 86 |
| San Luis Obispo.. | T | 7.14 | 20.75 | * | 42 | 82 |
| Los Angeles..... | .00 | 6.83 | 16.86 | 17.18 | 48 | 78 |
| San Diego..... | .08 | 4.78 | 11.70 | 10.34 | 50 | 68 |
| Yuma..... | .00 | 1.66 | 5.35 | 3.04 | 54 | 100 |

* No record.

THE IRRIGATOR.

Irrigating Deciduous Fruits.

J. B. Neff of Anaheim, Orange county, gives the *Gazette* an interesting paragraph about summer irrigation for apricots and peaches. In order to have large, well-developed fruit the orchard must have sufficient water, and at the proper time. If too much water is put on just before the fruit ripens it will make the fruit too soft and juicy, with too small an amount of sugar in the fruit, making it unfit for canning and taking too many pounds of green fruit to make one pound of dried fruit, and if the time between irrigating and the ripening of the fruit is too long the trees will begin to dry out and the fruit will be small.

For Apricots.—The proper time to irrigate apricots is when the fruit is half-grown, which is usually about the second and third weeks in May. If well watered at this time the fruit grows to its largest, and has time to ripen slowly as the ground gradually dries, until it has all the sugar which will go into the fruit. The mistake usually made is in putting on too little water. An orchard in full bearing and that has been reasonably well watered in the winter, or early spring, should now have as much as a full 100 inches of water for two hours to each acre. Apricots watered in this manner when dried should yield one pound of dried fruit to five and one-half pounds of green fruit, for the ordinary varieties; while some varieties will make one pound of dried fruit on less than five pounds of green fruit.

For Peaches.—Peaches, in order to be at their best, should have an equal amount of water, and, as they ripen later, will require two summer irrigations—the first should be about the first week in June and the last about one month before the time each particular variety will ripen.

In order to make the orchard pay it must have the proper attention, and at the proper time.

If the orchard is properly pruned and irrigated, has good cultivation and fruit thinned, it is almost sure to be well loaded with the finest of fruit, and to be a source of profit as well as enjoyment to its owner.

Names of Irrigation Companies Desired.

The statistician of the U. S. Department of Agriculture is undertaking to perfect a list of the co-operative efforts of farmers in the United States, and desires to complete its list of irrigation associations in any part of the arid regions. This list will eventually be published with the object of informing farmers and the public in general how extensively and beneficially the work of co-operative irrigation has been developed.

Any contribution that readers of the *RURAL PRESS* may make to this list will be highly appreciated. Designate the canals or ditches by the names by which they are recognized, and the postoffice address at which the secretary or manager of the canal or ditch association may be reached by mail. Include any association that may be a stock company or corporation if it is managed and chiefly owned by a considerable number of its beneficiaries. While there have been many failures in co-operation among farmers, the result remains that it may be made to benefit farmers greatly, and notably in irrigation, and it is expected that the publication of the fact will stimulate the co-operative or associative spirit among farmers in desirable directions. Information in the line indicated may be addressed to Mr. John Hyde, Statistician U. S. Department of Agriculture, Washington, D. C.

Pumping for Orchard Irrigation.

The pumping plant at Sackett Brothers Company's big fruit ranch, six miles east of Winters, was installed last week, says the *Winters Express*, and is now doing excellent work.

Water is taken from Putah creek by a centrifugal pump of 7 inches diameter, discharging into a 10-inch pipe. The lift from the reservoir to the pump is about 3 feet, and the water is raised about 34 feet, being forced through from 500 to 600 feet of pipe, after which it empties into a ditch. The pump is run at a speed of 500 revolutions per minute, and has a capacity of 70,000 gallons per hour, but at present it is raising only about 50,000 gallons. A 26 H. P. engine is used, burning wood. The pipe is riveted at the joints from the pump to the top of the creek bank, but the remainder of the distance it is simply shoved together, and lies on the ground. The idea of having a larger discharge pipe than the pump is to diminish the friction, while there is less leakage at the joints than there would be if the water were forced through smaller pipe. After being lifted to the highest point in the orchard, the water is carried through ditches to the trees, which are laid off in squares by smaller ditches or trenches, and a space some 12 feet square around each tree is sepa-

ately flooded, then the water is conducted to the next tree, and so on until the entire orchard is given as much as it will readily absorb.

To all appearances the plan is working satisfactorily, and, if the theory of irrigation is not all wrong, will be of inestimable value to the orchard. The cost of the plant is about \$600. Including the engineer, it requires five to six men to do the work, and from four to six acres can be irrigated in ten hours. The intention is to apply the water to about seventy-five acres this season, and to put it on as often as needed until the fruit is matured.

An Orchard Pumping Outfit.

M. L. Sparks, in the La Verne district, says the *Pomona Times*, has not only model orange and lemon orchards, but he has just added to his water supply a well and pumping plant that probably are not surpassed anywhere for effective service. The well is 320 feet deep, with 12-inch casing. The water stands at 144 feet from the surface and the pump reaches down 224 feet. A water-bearing stratum of 10 feet lies at a depth of 219 feet, but, as others are obtaining water from it, Mr. Sparks passed through it without cutting the pipe, and at 320 feet he has passed through another water-bearing stratum of 57 feet; the pipe in this is cut and from it the well receives its water. At present the pump raises 26 inches, and, so far as is known, does not lower the water in the well. The pump is a double-acting 24-inch stroke—the only one of the kind in the valley. It is set upon a solid cement foundation, inside of an excavation 12 feet deep, with very heavy stone and cement walls, to which the driving machinery is securely bolted and braced, so that it runs with merely a perceptible tremor. The engine is a 20 H. P. and is propelled by gas. Gasoline and distillate are used—the latter at present. It runs noiselessly, and but for the snap of the electric spark its movements could not be heard 30 feet. The whole is inclosed in a good building, on a brick foundation, 18x32. The cost of operating the plant, Mr. Sparks estimates, will be about 20 cents an hour for gasoline or distillate and lubricating oil.

Declaration for State Control of Water.

At a meeting held in Fresno recently to consider the water question many speeches were made by people interested, all of whom favored State ownership. It was resolved to hold a mass meeting. The following resolutions were adopted:

WHEREAS, It is being advocated in different parts of the State that the State should take charge of and control the water-ways of the State so far as irrigation is concerned, and

Whereas, It appears that in some parts of the State the condition of the irrigators is deplorable, and unless the present system of handling can be changed, people will have to abandon irrigation and go to dry farming; therefore, be it

Resolved, That this meeting recommends that all irrigators use their best efforts to secure such litigation as will secure to all lands subject to irrigation a fair distribution of all the water that can be used for such purposes.

Resolved, That this meeting extend to all kindred organizations an earnest appeal for all assistance they can give the irrigators of this county.

Resolved, That this meeting adjourn to meet at Fresno, June 11th, at 2 A. M., for the purpose of organizing to carry out the resolutions above adopted.

ENTOMOLOGICAL.

Life History of the Peach Twig-Borer.

A small dull reddish-brown worm has been found for many years in California working early in the spring on the twigs of peach trees, causing the young leaves to wilt and gum to exude. Later in the season the same worm has been found in the peach burrowing around near the stem. During recent years this insect has been widely spread and become very prevalent in our peach regions. Only recently has the life history of this insect been traced out with a measure of fullness, and it is creditable to California observers that these facts of much interest to entomology and importance to horticulture have been ascertained by them. A recent publication of the U. S. Department of Agriculture entitled "Some Miscellaneous Results of the Work of the Division of Entomology" contains a carefully prepared article by C. L. Marlatt, giving a connected account from which we shall draw the leading facts.

Priority to Californians.—Prior to the observations made by Mr. E. M. Ehrhorn, as published by Mr. Alex. Craw, the knowledge of the twig-borer *Anarsia lineatella* was confined to the fact of its injury to peach twigs, either in terminals before the trees leaved out in the spring, as described by Glover; or in the young shoots and later in the ripening fruit, as described by Professor Comstock and others. While passing through California in the fall of 1896 the writer had the pleasure of meeting Mr. Ehrhorn and examining with him the curious hibernating chambers made by the newly hatched larvæ of this insect as far as then known to Mr. Ehrhorn and substantially as recorded by Mr. Craw. The discovery of this peculiar hibernating habit of *Anarsia lineatella* is very interesting in itself, and is also

a long step toward the completion of our knowledge of the life history of the insect, and is especially valuable as suggesting better means than any heretofore known of preventing damage from it.

History and Habits.—The fall brood of larvæ discovered by Mr. Ehrhorn may be taken as a convenient starting point in the life history of the twig-borer. In the fall, as reported by Mr. Ehrhorn (Craw), they appear as very small larvæ, living and working in the spongy bark chiefly at the crotches of the branches of the peach, and he surmises that they are from eggs deposited in these situations. Here the larvæ are supposed to grow slowly until the new growth appears in the spring, when they leave their cells in the bark and enter the new shoots. It is stated, also, that frequently the larvæ are nearly full grown when they attack the young growth. The later brood is said to attack the fruit near the stems. The occurrence of the larvæ during the winter in the situations noted is also thought to explain the fact frequently noted that the under and inside twigs, being the more accessible, suffer the most, while the exterior and topmost branches escape.

Our later studies confirm, in the main, Mr. Ehrhorn's conclusions as to the habits of the larvæ. That the larvæ make any essential growth in the winter, however, is probably a wrong inference, and the nearly full grown larvæ referred to were doubtless individuals that were wandering from one point to another, and had merely reached nearly full growth before they were observed.

Hibernating Chambers.—Both in the orchards of California and by means of the abundant material received at this office we have been able to make a careful study of the hibernating galleries or chambers of the young larvæ. These occur not only in the crotches of the smaller and sometimes quite large branches, but many of the larvæ utilize the roughened bark at any point. They burrow into the bark for a short distance, penetrating little more than the upper superficial layer, and form slightly elongated chambers, which are lined with white silk and the opening afterwards closed. The location of the larvæ may be readily recognized by the little masses of projecting excrement or comminuted bark at the entrance to the burrows. The size of the burrow and the fact of its being lined with silk precludes the idea that the larvæ feed in the fall or during hibernation, except perhaps in the mere operation of excavating the chamber.

The young larva, as taken from the burrow, is not above 2 millimeters long, and is of a general yellow color, with the head and cervical and anal plates dark brown, almost black.

While in their winter quarters the larvæ are subject to the attacks of predaceous mites, and many of them are destroyed by this means, as will be later noted. They are also occasionally parasitized by a chalcid fly.

Work in the Buds.—Early in April the larvæ begin to abandon their hibernating quarters and attack the new leaf shoots, but some individuals were found in the crotches by Mr. Ehrhorn as late as April 21. The damage becomes noticeable, as a rule, at the time the shoots are from $\frac{1}{2}$ inch to 2 inches in length, or, more properly speaking, mere clusters of newly expanded leaves.

In our experience, the larvæ begin to migrate only after the new foliage has begun to put out, and they attack the new shoots at any point, generally, however, from $\frac{1}{2}$ inch to an inch from the apex, either near or in the crotch formed by the leaf petiole and the stem. The longest burrow observed was $1\frac{1}{2}$ inches and the shortest $\frac{1}{4}$ inch. Sometimes the burrow extends about $\frac{1}{2}$ inch above the entrance, and occasionally the larvæ simply eat into the shoot as far as the pitch and then go elsewhere. The larvæ are seemingly restless and not easily satisfied, and are continually moving from one shoot to another, and are most active travelers. In this way a single larva may destroy or injure several shoots before reaching maturity, thus greatly increasing the damage.

When working in the succulent new growth the larvæ bores rather rapidly, sufficiently so at least to excavate a burrow two-thirds of its length in an hour. The length of time spent by the hibernated larvæ in coming to full growth in the green shoots is comparatively short, not exceeding ten to fifteen days.

In California and also in Washington the larvæ begin transforming to pupæ in the latter part of April, and the moths of the first brood emerge throughout May.

The adult larva tapers strongly toward either end, and attains a length of $\frac{3}{4}$ to 1 inch, or slightly more when in motion. It is of a dull reddish-brown color, the reddish color predominating before maturity and the latter after maturity, and the head, and the cervical and anal shields are dark brown or almost black. The space between the segments is noticeably light colored, and especially between the second and third thoracic segments. The hairs are long and spring singly from minute tubercles.

Pupation.—In confinement the larva on reaching full growth spins a scanty web, in no sense a cocoon, in the leaves and rubbish about the trees, or on the trees in the dried and shriveled leaves of the injured

shoots, or it attaches itself exposed on the twigs or bark. After thus securing itself the larva immediately pupates, becoming a brown, rather robust, chrysalis. In midsummer these transformations are very quickly accomplished. A larva, for example, which webbed up June 29, pupated July 1, and the adult emerged July 8.

Mr. Ehrhorn states that it is very difficult to find the pupæ in orchards as the larvæ hide in all sorts of places, as in crotches of the branches, between dried leaves, and about small peaches likely to drop off.

The Moth.—The chrysalis stage lasts from seven to ten days, and the moths of the first brood begin to appear early in May and continue to emerge throughout this month and into June in the latitude of Washington.

The adult moth is less than $\frac{1}{2}$ inch in length, expanding a little more than $\frac{1}{2}$ inch, and is of a beautiful dark-gray color, with darker spots on the forewings. It is a handsome insect and has a peculiar way of resting with its palpi bent back over its head and its antennæ laid closely down on the wings.

The Egg Laying.—The egg-laying habits of this insect up to this time not having been discovered and for the fall brood even being merely a matter of conjecture, special effort was made to get the facts concerning this feature of the life history. A number of moths reared in the Insectary were confined about May 10 with peach twigs 8 to 10 inches in length, of this year's growth. The material was unfortunately not examined for too long a time, but on May 28 it was found that many eggs had been deposited on these peach twigs, an egg having been placed apparently just above the base of the petiole of nearly every leaf. When examined most of the eggs had hatched and the larvæ had entered the twigs at or near the crotch formed by the leaf and twig, the point of entrance being indicated by a little mass of brown excrement.

The egg had evidently been placed in the protection formed by the two little spurs at the base of the petiole. Subsequently many other eggs were obtained from other moths, and they were, for the most part, similarly situated, namely, around the base of the leaves. In one instance nine eggs were deposited around the base of a single leaf, six of them close together under one of the bracts at the base of the petiole and three in the depression or scar left by the second bract, which had dropped. The recently deposited eggs are white in color and iridescent, but becoming before hatching distinctly orange.

In confinement the moths live about ten days and most of the egg-laying is in the first half of this period. The habits above described are those of caged moths, but it is reasonable to suppose that in a state of nature the eggs are deposited in much the same way, and this is rendered almost certain by the great regularity noted in the manner of their deposition. In but one or two instances were the eggs placed in other situations—one being placed on the upper surface of a leaf close to the midrib and two together placed in a groove at the side of the base of the leaf.

In the Fruit.—About the end of June Mr. Ehrhorn sent us some peaches said to be infested with the second brood of larvæ. Some of the peaches had been bored into a little way near the stem by what was evidently, from the size and nature of the burrows, nearly full-grown larvæ of the second brood. One of these was found, and also one pupa. On further examination, however, it was discovered that the larvæ of what is undoubtedly the third brood—the second of the summer broods—were present in numbers, not in the fruit, but in the short stems of the fruit which at this season are green and somewhat succulent. In these stems they had made their little chambers not unlike those in the twigs above described or those in the crotches in the fall, except that they were for feeding purposes and not lined with silk, as are the latter. Others were also found at the base of the leaf stalks just as we had been finding them in our breeding cages.

One of the important points remaining to be cleared up in regard to this insect is whether the larvæ found in the crotches of the branches in late summer and fall come from eggs placed in these situations or are migrants from some other parts of the plant. Mr. Ehrhorn's supposition that the eggs were placed by the moth where the larvæ chambers are afterwards found is borne out by the small size of the larvæ, which are not much larger than when newly hatched. The comparatively large size of the egg, and its striking appearance, and the lack of any attempt at concealment of it should enable one, where the insect is abundant, to clear up this uncertain feature without difficulty.

AGRICULTURAL ENGINEER.

Santa Clara Roads and Road Sprinkling.

Santa Clara county is counted the leader among California counties in the matter of good roads. At a meeting of supervisors from several counties held last week in Napa, Supervisor S. F. Ayres of San

Jose read an essay, from which we shall take several interesting paragraphs:

Economy of Good Roads.—The experience of Santa Clara county is that good roads are an economy both in the matter of actual expenditure and in facilitating business. We have nearly 1000 miles of graded and graveled roads, of which over 350 miles are regularly sprinkled during the dry season.

The Cost.—The cost of grading and graveling is somewhat less than \$2.50 per rod. Regraveling costs about \$2.50 every six years. We employed last year sixty-five water wagons, and the cost for watering was \$30,762.10, of which \$7564.35 was for water and \$23,197.75 was for distribution. The total cost of making and maintaining roads and bridges and obtaining the rights of way for the year ending December 31, 1897, was \$113,593.25. With our system of roads, our total county tax, with two exceptions, was the lowest in the State.

Just Ordinary Good Roads.—My idea regarding county roads is that they should be the best within the means of the people of the county under an honest and intelligent administration. We are not yet rich enough in California to build a system of highways according to the highest mark of engineering science and art in plan and construction. Nor do we need that. We have no frost to contend with, and such graded, graveled and sprinkled roads as can be built and maintained by energetic county supervisors and practical roadmasters will answer all our purposes. I do not suppose that the more sparsely settled counties of California can afford to build and maintain at the outset such a system of roads as we have throughout Santa Clara county. But they can make a beginning, and the sooner they make it the sooner will they be in the way of having what they need.

How to Proceed.—The main thoroughfares should be taken first. The farmers want good roads on which to haul their produce to the nearest railroad station, river or bay landing, and on which they can get to and from the county seat and their local business center. The secondary roads may be taken in hand afterwards. After such roads are laid out, graded and graveled, sprinkling is absolutely necessary to keep them in good condition. It is economical because it prevents wearing and rutting. Without it, the roads will soon go to ruin and have to be made over again at a heavy expense; besides which they will never be good. Prompt minor repairs must also be made. Whenever a chuckhole appears, it should be promptly refilled. A quick repair costs little; but if neglected, it soon causes a big expense. We use gravel nearly altogether in Santa Clara county because it is easily obtained and cheap. In some counties where the kind of rock is at hand, broken stone may be used to better advantage with the help of a portable rock crusher, which is comparatively inexpensive.

State Highways not Approved.—We of Santa Clara county do not favor a State system of highways. We do not consider it either just or necessary. County roads are for local traffic. We are unable to understand why Santa Clara, after providing a system of good roads for its own people, should be taxed to build roads in other localities.

Traffic and travel between the various parts of the State is carried on by the railroads and waterways. They are the highways for that business. If the respective counties will make good local roads, the connection of those roads at county lines will give them all the State highways needed.

The value of good roads is indicated by the work which they do. The exports of Santa Clara county amount to about \$7,500,000 annually.

All these products at the different stages of their movement have to be hauled over our county roads many times. A great portion of this hauling is during the winter season. It is evident that it would cost the people of that county a great deal more expense in time, labor, use of animals and wear and tear of vehicles but for our good roads. No condition of the weather prevents the Santa Clara county farmer from hauling his produce to market over a firm, smooth road. By the same means, he and his family can get to town, church, school or to visit his neighbors at all times and seasons with comfort and convenience.

County Talent Adequate.—Grand boulevards and Alpine driveways for a few people to use once or twice a year would be a luxury that farmers could not indulge in. What we need is just a road good enough to use and which can be used every day in the year. With the assistance of our county engineers, our roads, particularly in the mountains, are now laid out in proper grades.

My opinion is that the sooner the counties understand that they have to build their own roads the better. If they wait for incorporated cities and towns to build them, it will be a long time before they have good roads.

It seemed to be the sentiment of the last Legislature that San Francisco and the other cities should be taxed to build a portion of the roads of each county in the State. Don't wait for such a law. Life is too short. Get in and have good watered roads for this generation and not travel in dust and mud all your lives.

Our experience, in a word, is that the building and

maintenance of good roads, well sprinkled, is the best investment we can make from both the business and the social point of view.

THE VETERINARIAN.

Decline of the Tuberculosis Scare at the East.

The refusal by the General Court of Massachusetts to make any appropriation for the suppression of tuberculosis in cows ends for this year, and probably for a good while, says the *American Cultivator*, what has from the first been an expensive humbug. In this action Massachusetts follows the lead of Connecticut, which had before taken similar action. It is somewhat curious that the fear of tuberculosis from cow's milk took for a time such complete possession of the public mind as it did. That cows have tuberculosis nobody denies. They always have had it, and formerly much more often than now, except among herds enfeebled by being kept in confined quarters with bad air and exposed to tuberculosis germs. But these germs, as is now known, are almost if not always taken directly into the lungs through this vitiated air, and find lodgment in some of the lung passages only when they are not in healthy condition. There has never been proof that tuberculosis germs found in milk can develop tuberculosis in the healthy human system, or in any animal. Calves from tuberculous cows are born free of the disease. If they contract it later, the fact is far more likely to be due to breathing germs of tuberculosis through the tainted air of stables than to taking it through the stomach in milk. All the acids in the stomach necessary to digestion kill the germ as soon as it touches them. The very first process in digesting milk sours it, and thus kills the germ of tuberculosis, while other germs are at the same time created to aid digestion.

Injuries Inflicted by the Commission.—It becomes the *American Cultivator*, which has always protested against this useless commission, to speak the plain truth about it now. If its members did not know that the work they were doing was needless and cruel oppression of farmers, whose stock was destroyed on the pretext that its further existence endangered public health, they are entitled to full benefit of this fact as their excuse. But otherwise they have no excuse whatever. The damage to the farmers of the country from this scare amounts to millions of dollars yearly. Stock has been slaughtered in most of the Northern States that possibly at some time had been affected by tuberculous germs, but as the germs had encysted, there was no longer any danger from them. It is true that the State paid for stock thus slaughtered. But it was always less than the stock was worth. But every cow killed was an advertisement to the world that milk had become a suspicious article of food. If it is dangerous in any way, it is far more apt to be as spreading germs of typhoid fever, diphtheria and other infectious diseases. But every such case promptly advertises itself. It was only the tuberculosis commission which was always going through the State, advertising that milk might be very unsafe to drink, even though no present evil resulted from its use as food. Against such dread of unknown evil no argument can prevail. Letting it alone until the hard common sense of Massachusetts should rise and trot the commission was the best way to get rid of it. We heartily congratulate the farmers of Massachusetts and Connecticut that this has at last been done.

The Tuberculin Test.—The late report of the cattle commissioners of Massachusetts says: "We have in tuberculin a fairly reliable diagnostic agent. It should be used to verify the diagnosis on cattle condemned as tuberculous on a physical examination, and it should be used where owners of herds are desirous of eradicating this scourge from among their herds. The disease can be eradicated where the test is applied two or three times, and the owner complies with the laws of hygiene, and has a barn that can be properly disinfected. Where a breeder exercises intelligent care, it is even possible to raise a healthy herd from a diseased one."

If the cattle commissioners had talked or written like that a few years ago, it would have spared us some space which was used in the *American Cultivator* is opposing their dogmas, theories and methods. But they declared then that tuberculin was "an infallible test," "absolutely reliable," and that when the test revealed the disease in an animal there was no remedy but to kill it, and all of its progeny and descendants.

If an animal reacted under the test it was condemned and killed, and then they proved that it was diseased by finding a red spot or a white spot or a kernel somewhere in the meat or the internal organs, that could only be detected by a powerful microscope, and not even then sometimes, unless the one who was looking through it was in the employ of the commissioners and drawing a salary for finding such a spot.

They did not think then that it was at all important that the cattle owner should have his stable

properly ventilated, and that he should otherwise comply with the laws of hygiene, or if they thought such a thing, they said nothing about it.

Answers by Dr. Creely.

Obstructed Teat.

TO THE EDITOR:—A cow of mine that came in a week ago has a lump in her teat about the size of a bean. When I try to milk her it works in front of the opening and stops the flow of milk. The lump is hard and sometimes will work up into the bag so far I cannot feel it. Will you kindly tell me what to do to get rid of it?—W. H. COMSTOCK, Folsom.

After milking inject daily Marchand's peroxide hydrogen. If it is too troublesome get a milk tube. If the lump grows larger, or does not disappear within two weeks, let me know.

FRUIT MARKETING.

Progress With the Raisin Growers.

The committee of Fresno raisin growers to whose work we referred last week has met and called a delegate convention of growers of Fresno, Kings, Tulare and Madera to assemble at the Farmers' Club in Fresno on Thursday, May 26th, at 10 o'clock. This convention is to meet the committee and modify or amend the committee's proposals as may be deemed advisable. They are then to be submitted for ratification to the mass meeting of growers which was adjourned to meet at Kutner Hall on Saturday, May 28th, at which meeting it is earnestly desired that all raisin growers in the district shall be present. The following are the proposals now offered for consideration:

That an incorporated company be organized to be composed exclusively of raisin growers under the name of the California Raisin Growers' Association. That such association shall elect seven trustees who shall have full charge of the packing and sale of the raisin crop. That members shall pool all their raisins and packing houses in the hands of these trustees. That growers shall have the right to choose either one of two ways to have their raisins sold:

First—They may have their raisins sold by the trustees for their account, giving the grower all the raisins will sell for during the season, less necessary charges for packing and selling; or

Second—The grower shall be paid in cash not less than at the rate of 2½ cents per pound in the sweat box for merchantable raisins, or a higher price if the market advances as is expected.

In order to provide the large amount of money required to place the industry on this solid foundation, the committee ask that the growers pledge their crops to the committee on the above terms for thirty days. If these pledges cover 75 per cent of an average crop in the counties of Fresno, Kings, Tulare and Madera, they will then be taken to San Francisco by the committee to show the financial men the good faith of the growers. If the committee succeed in making the necessary financial arrangements, then the organization will be perfected as above outlined; but if after thirty days this is not done, then the pledges shall be null and void and the growers stand released.

The committee are very strongly of the opinion that if they are supported by the growers by a pledge of 75 per cent or more of the crop they will be able to secure all the money needed to make advances to the growers and to buy all the raisins that may be offered at 2½ cents in the sweat box, and thus begin a work that will make raisin growing the most profitable industry in California. M. Theo. Kearney, Louis Einstein, T. C. White, Alex. Goldstein, L. S. Chittenden, A. L. Sayre, W. F. Rowell, Committee.

Walnut Growers' Convention.

In response to a call for a convention of the walnut growers of southern California, about sixty persons met last week at the Chamber of Commerce in Los Angeles to discuss plans for an organization by which prices may be maintained at a good figure. Santa Barbara, Los Angeles and Orange counties were represented. Captain E. S. Smith of Santa Barbara was elected chairman and C. E. Holton of Fullerton secretary.

The matter of presenting a plan for organization was referred to a committee as follows: S. F. Daniels, Fullerton, Walnut Growers' Association; L. B. Benchley, Golden Belt Fruit Co., Fullerton; Messrs. Judson and Gooch, Los Nietos and Ranchito Association, incorporated; Mrs. Strong, Los Nietos and Ranchito Association, not incorporated; P. F. Cogswell, El Monte; R. H. Sanborn, Tustin; J. B. Neff, Anaheim; Captain Smith, Santa Barbara.

Preliminary Steps Toward Organization.—The committee reported that a central walnut growers' association, excepting the Rivera and Fullerton associations, be formed; that a combination composed of

every incorporated association, including Rivera and Fullerton, be formed with good and sufficient bonds, fixing prices at which nuts shall be sold and consignments not allowed; that each association in fixing prices shall be allowed one vote for each 100 tons or major fraction that may have been produced by its members in 1897.

It was decided, after some discussion, that the walnut growers meet again June 10th to draw up formal articles of incorporation, appoint directors and in executive session arrive at some understanding regarding the fixing of prices. A committee, consisting of E. K. Benchley of Fullerton, J. B. Neff of Anaheim, R. H. Sanborn of Tustin, P. F. Cogswell of El Monte and A. R. Sprague of Manzanita, was appointed to draft by-laws for the central association to be formed and report at the next meeting.

Southern California Deciduous Fruit Exchange.

An organization with the above title was organized at Los Angeles last week. Seventeen delegates representing thirteen local associations participated in the meeting. A. R. Sprague presided. After passing a motion to organize as proposed, incorporation papers were presented and read by the secretary, G. H. H. Goodwin. It was decided to incorporate under the name The Southern California Deciduous Fruit Exchange, with a capital stock of \$100 divided into 100 shares of a par value of \$1 each. The objects of the incorporation were set forth as follows:

(a) To promote the interests of producers of fruits and other food products of southern California, especially by collecting and disseminating information and statistics bearing upon the preparation and marketing of said products; establishing uniformity in methods of grading and packing; extending and developing markets. (b) To borrow money; to loan and make advances of the same upon products in possession of or under the control of the corporation, and to promote the formation of local co-operative associations to affiliate with this corporation and assist in establishing their credit. (c) To purchase all supplies for the different local associations used in raising, preparing and marketing said fruit and food products; to lease, purchase or otherwise obtain real or personal property necessary to the transaction of the business of the corporation, and to sell or otherwise exchange the same. (d) To receive, store and market for account of its different associations all fruit and all other food products entrusted to the corporation for the purpose, on such terms as the board of directors shall prescribe.

The following were named as a temporary board of directors: A. R. Sprague, president; M. O. Randall, Lamanda Park, secretary; J. B. Neff, Anaheim; Robert Dunn, Fillmore; F. A. Bliss, Duarte; Morton Haig, San Gabriel; A. L. Schofield, Lamanda Park; W. H. Shureman, North Pomona; J. A. Brown, Hemet; Charles E. Tebbetts, Pasadena; J. M. Gunnett, Burbank.

Orange County Organizations.

The Tustin Fruit Association has organized and elected the following directors for the ensuing year: D. H. Thomas, H. K. Snow, P. T. Adams, U. S. Holderman and T. H. Smith.

The growers decided to organize an association to be known as the Santa Ana Valley Walnut Growers' Association, and R. H. Sanborn was elected temporary chairman of the meeting and J. D. Wilder secretary. The association adjourned to meet on Saturday, May 28th, for the purpose of perfecting the organization by adopting articles of incorporation and electing permanent officers.

The directors of the Deciduous Fruit Association have let the contract for drying fruit to M. B. Fassett of Ontario. George Boyd will be in charge of the work, which will be done at the packing house near the Santa Fe depot in Anaheim.

The directors of the Orange County Preserving Company held a lengthy executive session at the City Hall last week, and fixed upon the following prices to be paid for fruit: Apricots, first class, \$18 per ton; second class, \$13 50; cling peaches, \$18 per ton for first class fruit, suitable for canning.

THE DAIRY.

Errors in Dairy Management.

If anyone should be tempted to doubt that good management is needed to make a creamery succeed, he should purge himself of that doubt. There is liable to be mismanagement from the beginning with purchase of poor machinery, hiring poor workmen, and so on to the end. How mistakes are made is not often so clearly described for the public benefit as we find them in the report of the Diamond Mountain Creamery of Lassen county, as published in the

Susanville Mail. It is instructive reading, as laid down by the retiring president.

A Series of Mistakes.—During the preceding year, I am sorry to state, the Board of Directors have made some mistakes and have met with several losses. The reduction of the price of butter making and the renting of the creamery on certain terms were both disastrous. Disastrous to the company, for the reason that the income from the rent and percentage was not sufficient to defray the expenses, and proved a loss to the patrons of the institution in consequence of the butter being made by an inexperienced hand, so far as creamery butter making was concerned. It was not considered a safe venture to hold it until the early fall months, when better prices prevailed, and it had to be disposed of as soon as it was made at low figures, for the reason that it would not keep. It is always wise policy to put out a first-class article, else in a short time the reputation of the creamery must suffer. In other words, what is worth doing is worth doing well, and, in order that the best results may be obtained, you must have some one employed who has had experience in the conduct of creameries.

Loss and Waste.—The employment of Spellier and Drodge proved to be a great failure; much of the cream was lost in separating, and what butter was made was of a very inferior grade and had to be sold at a sacrifice. Much more wood and supplies were used or wasted and the machinery damaged, and by the time the plant was put in readiness for operation again the company was out about \$200.

The Recourse.—The Board of Directors, by past experience, found it necessary to increase the price of butter making to 3½ cents a pound. The Board also, by considerable effort, secured the services of W. T. Mitchell as superintendent of the creamery. He is one of, if not the foremost, operator in the State, and, under his direction, the patrons as well as the company are doing a satisfactory business. We are realizing the very highest market price for our butter; getting a larger percentage of cream from the milk, and, notwithstanding the paying of higher wages, are running at less expense per month, and, in place of running in debt, we are steadily working out. I would recommend that the next Board retain the services of Mr. Mitchell, if possible; if not, bear in mind the experience of the present Board and remember that the best is always the cheapest in the long run.

The Business.—I fail to see any reason why the dairy business should not be profitable in this county. To be sure, we have a heavy freight rate to contend with—but look on the other side of your land of plenty: your green meadows and fine looking grain fields; your healthy, happy, prosperous and intelligent people, and give a reason why we should not be able to compare with the best of the counties in the State. All it needs is unity of action and determination in all enterprises. It is he who works with energy and perseverance who succeeds. Remember that all beginnings are hard, and experience brings any enterprise to its summit. Ours is comparatively a new enterprise; we are still learning, but steadily improving, and are sanguine of ultimate success. All that we ask is that you give us your patronage and plenty of it.

To the shareholders who are not patrons I would say that there is no cause for alarm of losing only the interest for the present, as we are improving the factory right along, and will work out of debt in a short time, as will be proven in the financial report.

Purer and Cleaner Butter.

Major Alvord, chief of the Dairying Division of the Department, says that dairymen and butter makers have scored a decided triumph in Pennsylvania. The pure-food laws of that State are well to the front in all directions. One of the worst features of the modern butter trade has been the putting on the market of old, rancid, unsalable butter, worked over, sterilized and mixed with a little fresh cream, as fresh butter. It analyzes well and is difficult of detection, and is giving more trouble than oleomargarine. Under the new Pennsylvania law it is required to be labeled "Renovated Butter," which designates it at exactly what it is.

In all matters of prosecution for violation of the pure-food laws—the filled-cheese law and the oleomargarine law—the Treasury Department exercises exclusive jurisdiction, and, while Treasury officials do effective work, they do it rather from the standpoint of obtaining revenue than in the interests of honest products and protection to the consumer. This seems to be something of a mistake, if the intent as well as the letter of the law is to be carried out. If the Treasury officials can detect a case of fraud and collect a fine, they are quite willing to have the offender continue his practices, which will enable them to pounce upon him again. This brings revenue to the Government, but meantime the consumer continues eating adulterated and bogus products. It can be stated, however, that the two departments work very harmoniously together, and that the suggestions of the Secretary of Agriculture are received and acted upon in good part by the Treasury officials.

AGRICULTURAL REVIEW.

CALIFORNIA.

Alameda.

LATE OPENING OF THE CANNERY.—*Enquirer*: There is reason to believe that the Hickmott cannery will not open until the late fruit is ready to be marketed. For several weeks past Mr. Hickmott has been making strenuous endeavors to purchase from the growers, but they all hang back and will give no quotations. Mr. Hickmott, however, has not given up all hope of working on early fruit. There is no question about running later in the season when pears and late peaches come into the market. In the event of not starting until these fruits are ready the cannery will not begin work until some time in July. Mr. Hickmott's other cannery on Boulder island is running full blast packing asparagus. About 200 hands are employed on this work, but the season will soon close.

EFFECTS OF THE RAIN.—About an inch of rain has fallen in Pleasanton valley. It has done slight damage to hay that was cut, but the benefit received far outweighs the loss suffered. Much of the hay crop is still growing. This will now yield a fair crop in many places. Grapes will now probably give a fair yield. Beets will be all right. Fruit is saved from dropping off, while vegetables and hops are greatly benefited. It will also help the pasture. Altogether the rain has been a great blessing.

HAYWARDS CANNERY.—*Journal*, May 21: Hunt Bros. cannery is in readiness for the fruit season. The capacity of the plant has been almost doubled, and they intend to put up a large pack this year and to employ over 400 people. Superintendent Van Eaton has had charge of the extensive improvements just completed. They expect to start in on cherries in a couple of weeks.

Butte.

THE HEMP MILL.—*Gridley Herald*: Mr. Heany informs us that he will at once reconstruct the mill and put in new machinery. He has employed thirteen men in the breaking, and the community is to be congratulated that these enterprises have located near it. There was no insurance on the mill or the haled hemp. Two horses which were hitched to a wagon and tied by the side of the mill perished from the heat. The small blaze started from the hot journal of the carding machine. Barrels of water stood about the building, but so quick was the spread of the fire that there was not time to take the few steps necessary to reach the water barrels. The loss will run up towards \$6500 on stock, machinery and building.

Colusa.

RIVER IMPROVEMENT.—*Sun*, May 21: The permit to commence the river improvement was approved Wednesday at Washington by the United States Government engineer and the Secretary of War. Now the Board of Public Works can execute their extensive plans, the removal of the Newtown shoals, building of easements and wing-dams. This means much to the Sacramento valley.

Lassen.

BIG VALLEY CROPS.—*Susanville Advocate*: L. C. Stiles, who returned from his trip to Big Valley last Saturday, says crops are looking well in that valley, being fully a month ahead of last year, and an occasional shower at the right time will guarantee a big yield—of grain, particularly.

Los Angeles.

CITRUS FREAKS.—*Pomona Progress*, May 19: One of the curios at the Pomona Fruit Exchange is a monster Australian Navel, grown on R. A. Allen's place. It is a hold-over from last year, and was supported in its position by a limb of the tree. Its measures 19 inches in circumference, but its weight is not quite so remarkable. A lemon is nearly 5 inches in length and only two-thirds of an inch in diameter, resembling in shape the red pepper. Another is an orange 4 inches long and 1½ inches in diameter. There are oranges with a projection resembling a bird's head, even to the ear, which is a curious worm-like growth. There are twins and triplets and oranges with horns and long noses, and others wrinkled up as if they had seen a century of life and an unusual amount of trouble.

ORANGE PRICES.—The prices offered for Seedlings, Sweets and Valencia are very discouraging, and the Navels are not up to what they were a short time ago. The reason given for this depression is the entrance of small fruits on the markets. The Valencia, although a very late orange, are being shipped in large quantities. Last year the final lot of Valencia were shipped by the Pomona Fruit Exchange in November.

A BIG BUG.—*Express*: Horticultural Inspector Richardson and J. W. Ross are engaged in fumigating the orchards about Pasadena. Tents made for the purpose are drawn over the trees and pitchers and howls containing the cyanide gas placed beneath the trees to kill the pests. Last night the inspectors removed one of the tents and found a tramp who had crawled beneath the shelter. He was in an unconscious condition, but was finally resuscitated after much effort.

Marin.

ARBOR SOCIETY.—Some public-spirited citizens of Marin county have organized themselves into an arbor society at Sausalito. In their prospectus it is announced that in every suburban community there is much to be done in the way of caring for and beautifying its highways and byways. The cost of membership is made slight and it is hoped to enlist a large number of persons in the objects of the organization.

Mariposa.

ANOTHER WAR ON HAND.—The condition of affairs in the California national parks, owing to trespassing herds, has grown serious. The guards of the regular army troops having been called away on account of the hostilities, the herds are taking advantage of their absence. Supt. MacKenzie, in a letter to Secretary Bliss, says that thousands of cattle and horses have passed through Yosemite Park. He is also credibly informed that sheep herders propose to hold the ranges by force of arms against all comers, the herders thus first reaching the range keeping out others. Those in charge of the flocks, he says, have been supplied with firearms by their employers, and he fears the Park may become the scene of a fierce struggle. Many of the herders and some of the owners are Portuguese and Basques and are capable of lawlessness under present conditions.

Mendocino.

HOPS.—*Ukiah Democrat*, May 20: Hop men are now busy training and suckering the hops. The recent rain was exceedingly beneficial to hops and the vines are now to the top of the pole and are ready to be trained on the string. Prospects for a good crop are good.

SHEARING.—Sheep shearing is now occupying the time of the men who have been idle during the spring, and quite a number of the stockmen have employed Indians to do their work. The latter are said to be fully as satisfactory as white men.

Merced.

COYOTE BOUNTY.—*Sun*, May 20: The Board of Supervisors at their meeting last week rescinded the act, enacted two months ago, allowing a bounty of \$2.50 on coyote scalps, to take effect June 1st, 1898.

Napa.

SHERRY MAKING.—*St. Helena Sentinel*, May 19: The Miguelavaca Wine Company of Napa has leased the Lisbon winery

of the same place, and intends this coming season to make 15,000 gallons of sherry wine. The ovens of the rented property are in first-class condition.

Orange.

THOUGHTS FOR A DRY YEAR.—*Santa Ana Blade*, May 20: A careful estimate by competent judges shows that in the Santa Ana valley, which includes Anaheim, Fullerton, Santa Ana, Orange and Tustin, the crop of walnuts, according to present prospects, will be the largest by considerable ever harvested in the history of the county. Almonds, too, are a good crop, while apricots and peaches should be thinned at least one-third to do the trees justice. In brief, the fruit crop is, on the whole, larger than usual, and the scarcity elsewhere assures the growers good prices. The prospect for feed, too, has greatly improved, particularly since the rain.

ALAMITOS SUGAR.—J. Ross Clark of the Alamitos sugar factory was seen at the Southern Pacific depot on Tuesday afternoon, on his way from Alamitos to Los Angeles, and stated that about 700 acres of beets have acquired a good stand, and that the factory would have considerable of a run this season, despite the reports to the contrary. The recent rains have helped the beets wonderfully, and many acres are looking greatly refreshed by reason of the copious downpour.

POULTRY FIGURES.—Among Orange county products are included 15,400 dozen hens—an average of seven dozen eggs per hen—making 107,800 dozen eggs at 16 cents per dozen (this being the average price for 1897)—\$206,976.

Riverside.

RABBIT BOUNTY.—*San Jacinto Register*, May 19: The rabbit hunt law, the Recorder says, cost the county nearly \$5000 for the months of February, March and April, but it was easily worth twice that amount to the farmers with grain fields or unprotected orchards in close proximity to the foothills.

San Bernardino.

BEETS AT CHINO.—*Champion*, May 20: It is estimated that this rain will increase the acres of good stand by 500, and the total yield of the Chino ranch by 10,000 tons. This increase comes not only from the new planting, but from every acre already planted. On a large acreage considered doubtful of any crop at all, a good crop is now assured, and on a very large part of the acreage planted the yield will be doubled. There are scarcely any fields on which the yield will not be increased by this rain. The ground is well soaked, and the cloudy, damp weather since the rain has caused the moisture to go down deeper, and there has been little or no loss by evaporation. All in all, the prospect for a beet crop has improved nearly 50 per cent in the past six days.

CYANIDE BY WHOLESALE.—At the Supervisors' meeting an item of interest was the opening of bids for the supply of cyanide of potash for the fumigation of trees by the Horticultural Commission the coming season. Last year they used 9 tons and 300 pounds, and the amount called for this year was 9 tons. The first bid opened was from W. D. Rosenberger of Ontario, who offered to supply that amount as wanted at 30½ cents per pound. Pierce & Robbins of Chino thought it could be done for 30 cents per pound, while Jacob Jeffreys of Ontario put the figure at 30 3-10 cents per pound, adding the proviso that if the article declined in price so the Board could buy below that figure, they would be released from the contract. His bid was one-twentieth of a cent above Rosenberger, but owing to this extra clause and the fact that he furnished the German cyanide, while the other dealer was to furnish the English, which is not considered quite as good, the contract was awarded to Jeffreys.

ORANGE ORCHARD SOLD.—*Sun*, May 18: E. J. Gilbert has sold seventeen acres of bearing orange orchard on Colton Terrace for \$8400, or almost \$500 per acre. The trees are mostly ten years old and the tract is set to a number of varieties, less than one-third of it being in Navels. The orchard lies in the Colton Land and Water Company's tract. The purchaser, Kate D. Hathaway, comes from the East. The importance of the sale is not so much in the total purchase price as in the price per acre. The transfer was made at once, except that Mr. Gilbert takes off the balance of the crop. He still owns another orchard in the same vicinity.

San Diego.

ESCONDIDO.—There will be a much larger amount of hay made than was first anticipated, and it is now settled that some threshing will be done. Corn and vegetables are doing fine and make quite good crops even without irrigation.

CITRIC ACID.—It is expected that the citric acid factory at National City will begin operations by June 1. A carload of machinery was shipped from Boston on April 28 and is now due.

HONEY OUTLOOK.—*Union*, May 19: A prominent bee keeper of this city who returned from a trip through the hack country Saturday evening reports that the outlook for the apiarists this year is extremely discouraging. He says that while a large number of plants are in bloom there is no nectar in the flowers, and it will be necessary to feed the bees to keep them from starving. He stated that if the weather remained cloudy it would be impossible for the bees to gather enough honey to keep themselves, but if warm weather should now prevail they would probably pull through.

HONEY.—*Escondido Advocate*, May 20: The bee keepers throughout the county are discouraged over the outlook for a honey crop. It is feared by many that they will have to feed their bees to carry them over to next season.

San Joaquin.

PEACH PRICES.—*Stockton Mail*, May 21: The coast canneries are particularly anxious for peaches, and the man with a good peach crop this year can shake hands with himself and make merry. The California Canning Company, successors to the Lucks, is now offering as high as \$40 a ton for peaches, the Muir variety being in the greatest demand. The peach crop in San Joaquin county will be light, but the quality will be first-class, owing to the recent irrigation they have received by windmills and pumping plants, which the dry spell has forced proprietors to put in, and the fruit will be larger than ordinarily.

San Luis Obispo.

CATTLE STILL GOING.—*Breeze*: Freight cars in which cattle are to be shipped to Omaha and other Eastern points have to be disinfected. A shipment of more than 100 carloads is now being made by the Newhalls from the Suey Rancho. The cattle have all been inspected. They go to Omaha. A few days since thirty cars were disinfected here. Last night these cars passed through from Guadalupe. There will be two more train roads, and the cars are being disinfected.

WELLS FOR IRRIGATION.—*Arroyo Grande Herald*: The question of irrigation has been solved for all time to come in the lower part of the valley. Another big flowing well has been completed on the Steele ranch about a half mile from the first one. All the neighboring farmers have got the fever and contracts are being made for wells faster than they can be put down.

Santa Barbara.

FEED AND STOCK.—*Lompoc Record*: The feed on the San Julian is holding up better than at any point in Santa Barbara county. As a wise precaution, therefore, the proprietors are now removing their great herds of cattle that they may be enabled to carry through some 30,000 sheep and a reasonable amount of young cattle with which to restock hereafter.

LOSS OF HORSES.—It is stated that of the 300 horses taken

from this section to Mendocino county by Messrs. Holloway and Houk of Los Alamos some fifty have died from being water foundered. Long drives on hot days between points where water could be secured caused many of the animals to overdrink themselves, with the result above stated.

BAD BIRDS.—The Mexican tanager has reached Lompoc and began his ravages on the ripening cherries. They are accompanied by the wax-wing or cherry bird. If the tanager comes in such numbers as it did two years ago, an infinite amount of damage will result to fruit, unless, as then, a war of extermination is waged against them.

BEANS AND BEETS AT SANTA MARIA.—A month ago this rain would have insured us a beet crop. Now it is too late, for the Union Sugar Company some time ago issued a release to farmers from this year's contract. As it is, beans may grow a fair crop, together with pumpkins, corn and other fodder, which will greatly relieve the absence of hay. The sugar factory is day by day assuming an appearance of completion. Rumor is current to the effect that the force employed will be doubled in a few days.

Santa Clara.

CHERRY SHIPMENTS.—*Mercury*, May 24: The first carload of cherries left San Jose for the East last Saturday. The cherry crop is going to turn out unusually heavy, and shipments will show it, provided prices are satisfactory.

EMPLOYMENT REGISTER.—The executive committee of the Farmers' Club has decided that the secretary keep a record of the names and addresses and references of any man, woman or child who desires to work in the orchards or driers during the coming season. A bulletin will also be kept at the club, giving the needs of members for help. There will be no charge to the applicants for work.

LOS GATOS CANNERY.—The Los Gatos Canning Company, under the management of George H. Hooke, who has leased the plant for the season, will start putting up a small pack of early cherries this week. Under the new management all fruit delivered to the cannery will be paid for in cash.

Solano.

LARGE EGG.—*Reporter*, May 21: Charles Packard captured the prize medal on Tuesday for the largest hen's egg so far reported, in this section at least. On that day he brought to town a Black Langshan hen's egg that measured 9 inches around the ends and 7½ inches around the middle and weighed strong six ounces. Inside of the big egg was another egg of ordinary size, perfectly formed and having a hard shell. The inner egg was surrounded by a yolk and white of the ordinary size.

Sonoma.

CANNING.—*Democrat*, May 24: The Rose City Canning Company, in their cannery near the Donahue depot on West Third street, has been overhauling and making ready for the season's run, which will probably commence on cherries next week.

SONOMA COUNTY TOBACCO.—David Hetzel, the Guerneville tobacco grower, is setting out 25,000 plants and expects to reap a big harvest. Some of the Hetzel tobacco was recently sent to Florida, and when cured so nearly resembled the genuine Havana that the best judges could scarcely tell them apart.

YOUNG ENOUGH TO DIG A WELL.—An item well worthy of being chronicled is the peculiar history of a well lately dug on the premises of Mr. J. H. Cuptill on the Laguna road near Lyttaker's blacksmith shop. Old Mr. Lyttaker, past eighty-three years, venerable and still full of energy, dug the said well. At the depth of about 11 feet a vein of water was struck suddenly of so vigorous a flow, that the pit had to be quickly vacated. The well promptly filled and continues to run off a 4-inch stream, the first artesian well yet struck in the neighborhood.

Tulare.

RAIL SHIPMENTS OF WHEAT.—*Register*: It is said that orders are in for a vast amount of California wheat—placed at a million bushels—to be shipped East by rail. Two trains loaded with wheat went through last night and railroad men feel that they are pretty safe for an all season's job. It was not to be expected that in the ordinary course of affairs the unusual run of work would keep up sufficiently to afford employment for all extra crews. However, if this quantity of wheat does go across the country there will be work for a good many men. Shipments across the country, while more expensive, remove danger of predatory Spanish ships gathering in our wheat, which they need almost as much as they do money.

SHEEP ON THE RESERVATION.—E. W. Houghton in Porterville *Enterprise*, May 20: Within the last two weeks there has been from 13,000 to 15,000 sheep driven up the Frasier mill road into the government reservation in direct and willful contempt of law. All these parties, with the exception of C. Brown, are aliens and non-residents; they own no land and pay no taxes, and are in every respect an unmitigable curse to the country, worse than the Egyptian plague of locusts. There is now a strip of land as wide as the settlers will permit as destitute of feed as the main road, and every future hand of sheep that comes up must either starve or encroach more and more on private property. This will inevitably end in people taking the law in their own hands.

A BAG AND A HALF.—*Hanford Sentinel*: Douglass McCord of Dallas has a six-teated cow. She is of the Durham breed, and all the teats are in good shape and give milk. The cow is a great milker and Douglass wishes he had more of her.

SORGHUMS.—An immense acreage of Egyptian corn is going to be planted in the Tulare lake region, where the land is moist and will produce a crop. Upwards of 3000 acres of new land is being planted on the north, south and western borders of the lake. We will have feed to throw to the birds this fall in this county. Boice Bros. have shipped Egyptian corn seed to three different counties.

Yuba.

HOPS.—*Four Corners*, May 21: This week of cool, moist weather has been very beneficial to the hop crops about here. The dry weather previous had forced the vines at a rapid rate and had hurried the forming of the hop buds. If this weather had not appeared the vines would have matured very easily, thus making a short crop. In the most forward yards the bulk of the work is finished. Little more will be done on them except cultivating.

Ventura.

THE OUTLOOK.—It is believed that considerable corn and beans and lots of pumpkins may be raised. Some of the crops that were not expected to make anything more than hay will now produce a fair yield of grain, and others from which nothing was looked for will yield some hay.

Yolo.

THE RAIN.—*Winters Express*, May 20: The rain has been of marked benefit to all green and growing grain, and probably not injurious to the ripe grain. Some fields in the foothills were ready to cut, but we saw none down. In fields where the grain was so short that there was no hope for it to mature the moisture has already made a marked difference in appearance, and there will be quite an addition to the pasture. Several farmers say that they believe the rain will add 25 per cent to their wheat yield and probably as much to the late barley.

THE HOME CIRCLE.

Freedom.

They are slaves who fear to speak
For the fallen and the weak;
They are slaves who will not choose
Hatred, scoffing and abuse
Rather than in silence shrink
From the truth they needs must think;
They are slaves who dare not be
In the right with two or three.

Is true freedom but to break
Fetters for our own dear sake,
And, with leathern hearts, forget
That we owe mankind a debt?
No! true freedom is to share
All the chains our brothers wear,
And with heart and hand to be
Earnest to make others free.

—James Russell Lowell.

A Change of Heart.

Miss Betty Hayden came out of her own little white cottage one morning, and hurried down the road in manifest perturbation of spirit. She breathed rapidly, and one of her tiny, blue-veined hands was pressed to her heart.

She was a small woman, and she seemed to glide rather than walk over the road down which she was going.

One of her neighbors, Mrs. Jonas Mason, was out in her flower garden cutting bachelor's buttons and striped grass for a winter bouquet, and she called out as Miss Betty flitted by her gate.

"Good-morning, Miss Betty." But Miss Betty made no reply nor did she even glance toward Mrs. Mason, who went into the house and said to her husband:

"I bet Miss Betty's heard."

"Heard what?" asked Jonas, abruptly.

"Head that they talk of hirin' a new teacher for our school."

"What makes you think so?"

"'Cause she went down the road just like lightnin', and she never even paid the least attention when I spoke to her. She's all upset about something, and I bet that's it. I declare if I don't feel sorry for her, after all, although I do think we'd ought to have a new teacher."

"It's hard for Miss Betty to give up. I'm goin' out and see if she don't go down to Silas Hardy's house."

In a moment or two Mrs. Mason came back and said:

"Yes, sir; she went straight down to the Hardy house. I saw her go flying in at the gate, and I don't believe she even stopped to knock at the door."

"I'd hate to be in Silas Hardy's shoes now. These little wimmen like Miss Betty are terrible when they once get started, and I never saw Miss Betty look so strange and angry as she looked this morning."

Mr. Hardy, a mild-mannered, kindly disposed man, was really in a perplexing position at that moment. He said afterward that Miss Betty's appearance had been so sudden that he had no time to fortify himself with arguments or reasons for taking the course he had taken as president of the school board.

Moreover, Miss Betty was in a frame of mind that made it of no avail to argue anything with her or make her amenable to reason.

She had burst into Mr. Hardy's presence like an incipient whirlwind, and her first gasping words had been:

"I want to know if it's true, Silas Hardy!"

"If what is true, Miss Betty?"

"If you're going to have a new teacher to teach the next term of our school, after I've taught it every term for twenty-five years?"

Silas Hardy tried to temporize. He was afraid to tell Miss Betty the simple truth. He had known that the news would be a good deal of a shock to her, but he had not expected to have her come to him in this way, with such a wild, distraught look on her face, and her voice quivering with indignation; for Miss Betty was ordinarily a woman of the gentlest spirit. Mr. Hardy felt truly sorry for her.

"Well, let us talk the matter over a little, Miss Betty," he said, kindly. "Let us see if—"

But Miss Betty interrupted him by

saying, in a voice of most unwonted shrillness and sharpness:

"I just want to know if it's true, Silas Hardy! I want a plain 'yes' or 'no.' Have you or haven't you hired a new teacher for the school?"

"Well, Miss Betty, I—"

"Say 'yes' or 'no'!" she cried, with shrill imperiousness.

"Well, then—yes!"

Miss Betty's hand went up to her heart again; she grew a shade paler, and the corners of her mouth twitched. Her voice was little more than a shrill whisper as she said:

"You have, Silas Hardy?"

"The other members of the school board and the patrons of the school thought it might be best to make a change, Miss Betty. But there's been no special fault found with you, only—only—well, you know, of course, that you haven't had a chance to keep up with modern methods, and now that we've got a new schoolhouse it seemed desirable to have a new teacher."

Scorn and indignation flashed from Miss Betty's blue eyes as she listened to these words, and when Mr. Hardy had finished she asked, tartly:

"Well, what else?"

"Well, I don't know as there's much else to say. Of course, the members of the board feel that they have a right to make a change if one seems desirable. There's not the least ill-feeling towards you. In fact, the board intends to have a set of resolutions drafted and presented to you expressing—"

"I don't want any resolutions—I'll tear them up if they send me any!" said Miss Betty, spitefully. "I'd like to know if I haven't always done my duty as teacher of the school, Silas Hardy? And I can tell you, and you can tell the members of the board, that I think I've been treated scandalously; yes, sir, scandalously."

"The person that told me about it said that there was a movement on foot to get me a fine chair, or a silver set, or something in the way of a 'testimonial,' in recognition of my 'long and valued' services! I'll pitch it out of the house along with your old resolutions, if anything of the kind is attempted!"

"And I tell you flatly to your face, Silas Hardy, that I think that you and the other members of the board have done a mighty mean and shabby thing in treating me this way! Didn't have even the manliness to come and tell me about it!"

"We intended notifying you this very day, Miss Betty."

"Well, I've notified you in regard to what I think of it, and I sha'n't let the matter drop here! I don't know nor care who you've got in mind to take my place, but, whoever he or she may be, I'll make them all the trouble I can. You can call it spite work or anything you've a mind to call it, but I haven't been treated fairly nor decently, and you'll see that I've spirit and grit enough to resent out-and-out injustice!"

With that Miss Betty left the house before Silas Hardy could say anything in defense of himself and his fellow members of the school board.

Many of her friends were of the opinion that it "was hard for Miss Betty to be set aside in that way," and yet some of her warmest supporters felt that a change was desirable, for Miss Betty has entirely failed to keep abreast of the times. She had a lofty contempt for new methods introduced by modern educators, and was conservative to the last degree in her ideas and methods.

Her pupils and their parents were more progressive in their ideas, and the result was that a new teacher was engaged to take the place of Miss Betty after she had taught the school continuously for a quarter of a century.

Not even her most intimate and sympathetic friends could understand the storm of grief and indignation that filled the heart of Miss Betty when the fact of this proposed change was made known to her.

She had not asked or cared to ask who her successor was to be.

"I despise her or him, or whoever it is!" she declared to herself, in her unreasoning indignation. "I suppose it's wrong, but I can't help it! And I'll never forgive the school board, never!" Miss Betty was not likely to come to want because of the loss of her situation. She was a thrifty soul, and fully half of the earnings of a quarter of a century were safely invested at a good rate of interest.

She owned the home in which she lived, and had but recently inherited a profitable piece of property from a relative, so that the loss of her salary, as teacher of the school, would not deprive her of anything necessary to her comfort and well-being.

"And it isn't the loss of the money that I'm complaining about," said Miss Betty, "it's the principle of the thing. It's the way I've been treated!"

It became necessary for Miss Betty to leave Howland and go to the town of Wayneford on a matter of business, the day after her interview with Silas Hardy.

"And it's well enough that I've got to go," she said to herself. "I'd fuss and fret myself sick if I stayed at home. I think I'll go on to Wallington and visit Cousin Martha Hood for a few days, but I'll be back by a week from Monday—the day school opens in the new schoolhouse."

"I can't bear to think of any other teacher taking my place, I can't bear to think of it!"

Howland was twelve miles removed from the railroad station, and a heavy, clumsy, old stage-coach ran daily between the small town and station.

Miss Betty found herself the only passenger on the morning she left home and her reflections were sad and gloomy enough as she rode by the pretty new schoolhouse on the hill.

A week later she was on her homeward way, feeling more resigned to the situation, but far from happy.

When the driver opened the door of the coach for her, she found another passenger already occupying half of the back seat—a sweet-faced and bright-eyed young lady of perhaps twenty-two years, simply dressed in black. Miss Betty climbed in beside her, saying as she did so:

"It makes me dizzy to ride backwards. If you don't mind, I'll sit here on the back seat with you."

"Not at all. If you would prefer the whole of the back seat, you may have it and welcome, for I do not mind riding backwards."

"No, no, I wouldn't have you give up your seat on any account," said Miss Betty. "There's plenty of room for both of us here. We're not either of us very large, are we?"

"Not very."

Something in the young girl's voice and manner pleased Miss Betty, and she said, cordially:

"I'm real glad to have company, and

I hope you're going clear to Howland!"

"Yes, I am."

"That's pleasant. It's a long ride, being up-hill most of the way. Have you ever been to Howland?"

"No, and, indeed, I have never been away from home and among strangers in my life, and I—I feel a little homesick already."

Her voice quivered a little, and Miss Betty said:

"Oh, you mustn't feel that way. Excuse me for speaking of it, but I see that you are in mourning."

"Yes—for my father—one of the best fathers in the world—and I'm afraid that I'm not keeping the promise I made to him to be brave and strong. But I must for the sake of those he left in my care, if not for my own sake. My mother died two years ago, and my two small brothers and I were left without any means of support. I must be the breadwinner for us all, and both father and mother to Roy and Harry."

One of Miss Betty's small, gray-gloved hands stole out from under her shawl, and clasped that of the young girl by her side.

"I know how to sympathize with you, my dear," she said. "I was left an orphan when I was about your age, and I had to be my own breadwinner."

"And did you have to go among strangers to do it?"

"No, I did not."

"Well, I don't know any one in Howland, and I'm afraid I do not make friends easily."

"Oh, you'll find folks in Howland real friendly and sociable. Don't you worry any about that. I s'pose you're going over to Howland to work in the factory. You'll find Mr. Carter, the owner of the factory, to be a kind man. Where are your little brothers?"

"They are with an aunt of mine in Rowland. She will board them for less than I could board them in Howland, and then there are such good schools in Rowland. The chief aim of my life, now, is to educate those boys and make good and useful men of them."

"It is a fine thing to live for," said Miss Betty, warmly. "It does me good to come across a young girl nowadays who has an ambition for something besides dress and a good time. You'll make friends in Howland fast enough. I shall be your friend, and there's my hand on it."

"Thank you. I'm sure you mean it. My mother lived in Howland for a few years when she was a girl, and I am hoping that I may find some one there whom she knew. Her name was Mary Baird."

"Mary Baird!" cried Miss Betty. "You are Mary Baird's daughter! Why, my dear! I knew and loved your mother better than any one else when I was a girl. I cried myself almost sick when her folks went out West to live. And you are Mary Baird's daughter!"

Disease

can be driven in or driven out. Dr. Ayer's Sarsaparilla drives disease out of the blood. Many medicines suppress disease—cover it but don't cure it. Dr. Ayer's Sarsaparilla cures all diseases originating in impure blood by purifying the blood itself. Foul blood makes a foul body. Make the blood pure and the body will be sound. Through the blood Dr. Ayer's Sarsaparilla cures eczema, tetter, boils, eruptions, humors, rheumatism, and all scrofulous diseases.

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Get Ayer's Sarsaparilla

You really must let me kiss you!" "I'm so glad to have found one friend so soon," said Helen Baird. "I have been nervous about going to Howland, and I think I'll tell you why. I'm not going there to work in the factory, but to teach the village school, and yesterday a gentleman from Howland was at my aunt's in Rowland, and he said that the former teacher of the school was exceedingly angry because she had been displaced, and that she might make it unpleasant for me. You can not imagine how I have worried about it. I wouldn't have taken the school if I'd known about it. The Howland school board wrote to the president of the academy in Rowland about a teacher and I was recommended to the board. I feel so worried about the teacher I have displaced. Do you know her?"

"Oh, yes; I know her very well."

"Do you think she feels so very bitterly towards me?"

"Well, she's a hateful sort of an old piece, and she has talked dreadfully."

"Do you think that she will ever forgive me?"

"She'll be an old heathen if she doesn't."

"You don't know how anxious I am to make friends with her, and to have her understand that I knew nothing at all about her when I engaged to teach the school. Do you think that it will make any difference in her feelings when she knows that?"

"Yes, I think it will; but, by the way, where are you going to board?"

"I do not know yet. I am going to stay at Mr. Hardy's for a few days while I'm looking around."

"Well, now, supposing you come to board with me. I'd love to have Mary Baird's daughter with me, and I'll do all I can to make peace between you and that hateful old Betty Hayden."

"Is that the former teacher's name? And, please, what is your name?"

"My name? Well, my dear, my name is Betty Hayden!"

"And you are—"

"Don't look so scared, my dear. I said some ugly, unkind things, but I am sorry. You'll never find a truer friend than Betty Hayden!"

And this she proved to the people of Howland when Miss Baird came to live with her.—J. L. Harbour in the Household.

Woman's Fear of Mice.

It is an old, old story to accuse womankind of cowardice where the mouse is concerned. But the oft-repeated charge that any woman will immediately go into hysterics or spasms at the mere sight of a small-sized rodent is an insult to the sex. Some may evince their dislike to mice in this way, but there are notable and conspicuous exceptions. For example, one woman, while engaged in her domestic duties, encountered a mouse in the flour barrel. Now, most women, under similar circumstances, would have uttered a few genuine shrieks, and then sought safety in the garret; but this one possessed more than the ordinary degree of genuine courage. She summoned the man servant and told him to get the gun, call the dog and station himself at a convenient distance. Then she clambered half way up stairs and commenced to punch the flour barrel with a pole. Presently the mouse made its appearance and started across the floor. The dog at once went in pursuit. The man fired and the dog dropped dead, the lady fainted and fell down the stairs, and the man, thinking that she was killed, and fearing that he would be arrested for murder, disappeared, and has not been seen since. The mouse escaped.

A FARMER secured an appointment as lightkeeper in a Maine coast lighthouse. The first night he went on duty he lighted up promptly at dusk and at 11 o'clock carefully extinguished the lamp. The next day, of course, there was trouble, and, when taken to task, he replied that he supposed 11 o'clock was late enough to keep the light going, as he thought that all honest men should be in bed at that hour.—Boston Herald.

The Training of Servants.

Although great stress is laid upon the importance of care in engaging help, the treatment and training of a servant, after a good selection has been made, are equally important, says the *Chicago Times-Herald*.

To convince a girl that her happiness and welfare are of interest to her mistress is a long step in the right direction. To the "new girl" the house and its appointments are strange, and the fear that "she will not suit" frequently adds timidity to her other disadvantages. If her predecessor has been a competent servant the mistress is unconsciously unjust by comparison, and the outlook is very disheartening; but how often the new-comer is an improvement upon the former incumbent, if given time and a fair trial.

"Bad luck to me; it's only six months I am in Ameriky, and it's siven places I've had," said a good-natured, ignorant Irish girl, recently, and yet half a year is not such a very long time in which to change one's whole manner of life, and without the aid of education and trained powers of reasoning.

The mistress should remember during the training period that it is not sensible to expect from these girls neatness and quick adaptation to ways of refinement, nice cooking and intelligent service. It should also be remembered that there is another and a brighter side to this. Under firm and gentle teaching, trying as it is to the nerves and patience of the mistress, these girls, with their uncouth ways, become excellent servants in many instances, and repay by their faithfulness all the efforts made in their behalf.

To Do Without Cheerfully.

It is an art, said Mary T. Bowker at the Pomona Farmers' Club meeting, to do without cheerfully. We might learn some good lessons on this subject from our mothers and grandmothers of the South, and perhaps if war's desolating hand is again laid heavily on our land we will go to them and ask them how they could drink their okra pod coffee and eat their corn cakes with brave and smiling faces. We will ask them how they lived on bare floors, denuded of rich and costly carpets to make blankets for the soldiers, and looked through curtainless windows that they might make the draperies into clothes. We will ask them how they endured coarse, patched and cobbled shoes and the dingiest of homespun dresses, who a few years previous were shod with the daintiest and most expensive foot-gear and were dressed in the richest fabrics. They will tell us that it was the thought of being able to do something for the cause so dear to them that made them cheerful; and that, however bare of comforts they themselves were, they knew there were thousands more needy for whom they were ready to sacrifice even more, if possible. The sharing of our poverty lightens its burdens, makes the heart glad and lifts the soul from its mire of selfishness.

Lawyer—Where were you when the trains collided?

Witness—In the rear car.

Lawyer—Then how could you see that the engineers were at their posts directly after the accident?

Witness—Didn't the collision telescope the cars? Well, I saw through the telescope.

Papa—Spring is here, my son. Have you noticed how everything is coming up out of the ground?

Bertie—Have I? Well, I guess. This is the first time in a dog's age I've got some decent bait without having to dig like a nigger for it.

Father (severely)—My son, this is a disgraceful state of affairs. The report says you are the last boy in a class of twenty-two.

Henry—I might have been worse, father.

Father—I can't see how.

Henry—There might have been more boys in the class.

DOMESTIC ECONOMY.

Domestic Hints.

CORN MEAL GRIDDLE CAKES.—One quart sour milk, two eggs beaten light, one teaspoonful soda, one teaspoonful salt, two tablespoonfuls molasses, one tablespoonful melted butter, add one-half cupful flour; enough corn meal to make a good batter.

OYSTER COCKTAILS.—For each person allow the strained juice of one-half of a lemon, one-half a teaspoonful of vinegar, eight drops of tabasco sauce, one-half of a teaspoonful of horseradish and one-half teaspoonful of tomato catsup. Add eight small blue points, let stand for five minutes and serve in a tall glass.

FRICASSED OYSTERS.—Put in a stew-pan a pint of drained oysters, add a tablespoonful of hot water, salt and pepper, and a dash of cayenne pepper. Boil for about three minutes, shaking the pan to keep from sticking. Strain out the oysters, and add to the liquor a gill of cream. Cook, but do not brown, a tablespoonful each of butter and flour together. Add slowly the oyster liquor and cream; when boiling hot stir in one well-beaten egg; add the oysters, pour

the whole over buttered toast and serve.

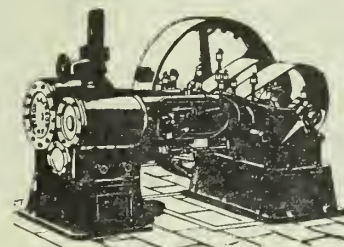
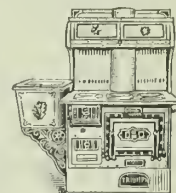
RHUBARB PUDDING.—Cover the bottom of a buttered pudding dish with some fine bread crumbs, and then with a thicker layer of rhubarb, cut into dice. Sugar is scattered thickly over the rhubarb, more bread crumbs added and the dish filled up in this way, bread crumbs being on top, with a few bits of butter and a slight grating of orange peel, if that flavor is liked. The pudding should be baked in a slow oven until the rhubarb is thoroughly cooked and the top of the pudding a tempting brown.

GOLDEN SPICE CAKE.—Cream together one cupful of butter and two cupfuls of sugar; add the well-beaten yolks of seven eggs and one whole egg, one cupful of molasses, one teaspoonful of ground cloves, one-quarter of a teaspoonful of salt, two teaspoonfuls of cinnamon, one teaspoonful of ginger, one-half of a teaspoonful of nutmeg, a dash of cayenne, and five cupfuls of flour. Add one and one-quarter cupfuls of thick sour milk, beat well for five minutes, add one scant teaspoonful of soda dissolved in one teaspoonful of hot water. Pour at once into well-greased pans and bake in a moderate oven.

\$50.00 RANGE FOR \$25.00

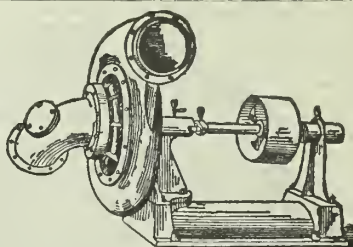
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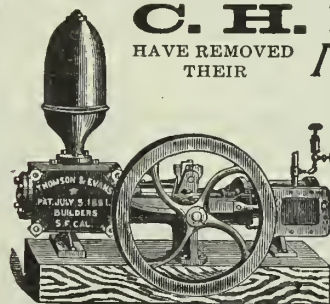
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S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, May 25, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | July. | Sept. |
|----------------|---------------------|--------------------|
| Wednesday..... | \$1 07 1/2 @ 1 05 | \$ 89 1/2 @ 88 1/2 |
| Thursday..... | 1 05 1/2 @ 1 07 1/2 | 88 1/2 @ 89 1/2 |
| Friday..... | 1 05 1/2 @ 1 08 1/2 | 88 1/2 @ 89 1/2 |
| Saturday..... | 1 05 1/2 @ 1 12 1/2 | 90 @ 91 1/2 |
| Monday..... | 1 13 @ 1 10 | 88 1/2 @ 89 1/2 |
| Tuesday..... | 1 08 1/2 @ 1 10 1/2 | 88 1/2 @ 87 1/2 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | July. | Dec. |
|----------------|-------------|------------|
| Wednesday..... | 10s 8 d | 7s 2 1/2 d |
| Thursday..... | 10s 6 d | 7s 2 1/2 d |
| Friday..... | 10s 3 1/2 d | 7s 1 1/2 d |
| Saturday..... | 10s 6 1/2 d | 7s 3 1/2 d |
| Monday..... | 10s 5 d | 7s 1 1/2 d |
| Tuesday..... | 10s 4 d | 7s 1 1/2 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|----------------|-----------------|-----------------------|
| Thursday..... | \$ 1 07 1/2 @ | \$1 02 1/2 @ 1 59 1/2 |
| Friday..... | 1 07 1/2 @ | 1 54 @ 1 58 |
| Saturday..... | 1 07 1/2 @ | 1 53 @ 1 57 1/2 |
| Monday..... | 1 07 1/2 @ | 1 53 1/2 @ 1 55 |
| Tuesday..... | 1 07 1/2 @ | 1 53 1/2 @ 1 55 |
| Wednesday..... | 1 03 1/2 @ 1 60 | 1 54 1/2 @ 1 53 |

Wheat.

Lower values are current for wheat than were ruling a week ago in all the grain centers of this country and Europe, with quotable declines much greater in Liverpool and San Francisco than in Chicago or New York. July wheat in Chicago is higher than a week ago, while September option in that center has not suffered a depreciation of more than 2 1/2c per bushel. In Liverpool, however, July declined the equivalent of nearly 15c per cental, and December dropped fully 7 1/2c per cental. In the San Francisco market spot values are nominally about 7 1/2c per cental lower than last quoted, the option market in the meantime declining fully 7 1/2c for December delivery. All the reports of the week have been bearish. The world's visible supply is stated to show an increase for the week of 2,900,000 bushels; increase in the United States and Canada, 1,100,000 bushels. The crop is reported to be maturing finely in Oregon and Washington and in the States east of the Rockies. Summer-fallow in this State is promising fairly, but winter fallow is a failure.

It is remarkable how many knowing ones put in an appearance to volunteer predictions as to the future of wheat, when the market happens to be excited and values are either on the up or down grade. A few weeks ago, when prices were on the ascendancy, there was no lack of evidence that values would continue to climb skyward until \$2 per bushel or more was realized. The argument advanced was that there was a shortage almost everywhere, with no surplus outside of the United States, and the quantity available here for export of very light proportions. Despite the showing and the prophecy, the speculative markets throughout the world broke badly within the past fortnight, and values for spot wheat were more or less affected by the break. Accompanying the tumble were predictions just as positive as those previously made in the opposite direction, that wheat would decline the coming season to 60c per bushel, or \$1 per cental, the reason given being that, owing to the high prices lately established, the acreage devoted to wheat in the grain-growing countries of the world had been greatly increased, and that the prospects in most of them were favorable for a heavy yield. No confidence was expressed in these columns of wheat going to \$2 per bushel or even reaching \$2 per cental in this market, although temporarily the latter point was nearly touched for fancy wheat. On the other hand, we are equally emphatic in stating we have no belief in the prediction that wheat will sell down to \$1 per cental, or a cent per pound, during the season of 1898-99. The prospects for growing wheat in this State are much better than a fortnight ago, but there is not the slightest probability that the yield will prove equal to the lightest crop of the past two decades. There may be a little surplus over and above home needs, but it certainly will not be extensive.

California Milling..... \$1 70 @ 1 77 1/2
Cal. No. 1 shipping, alongside..... 1 60 @ 1 65
Oregon Valley..... 1 60 @ 1 65
Walla Walla Blue Stem..... 1 70 @ 1 75
Walla Walla Club..... 1 60 @ 1 65

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 white wheat per cental for the week were as follows for the options named:
May, 1898, delivery, \$1.67 1/2 @ 1.60.
December, 1898, delivery, \$1.62 1/2 @ 1.53.
Wednesday, at regular noon session of Call

Board, May wheat sold at \$1.63 1/2 @ 1.60; December, 1898, \$1.54 1/2 @ 1.53.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|-------------------|-----------------|
| Liv. quotations..... | 6s 5 1/2 @ 6s 4 | 10s 5d @ 10s 6d |
| Freight rates..... | 17 1/2 @ 20s | — @ 27 1/2 s |
| Local market..... | \$1.30 @ 1.37 1/2 | \$1.60 @ 1.65 |

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

Flour.

If the millers of the local combine were as speedy in marking down card rates for flour when wheat declines as they are in marking quotations up when there is an advance, lower figures would have been chronicled for flour a week ago. As it is, shading of rates in favor of buyers has been rather common since last review, the market being weak and unsettled.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | \$1 00 @ 1 15 |
| Superfine, good to choice..... | 4 25 @ 4 50 |
| Country grades, extras..... | 5 50 @ 5 75 |
| Choice and extra choice..... | 5 75 @ 5 90 |
| Fancy brands, jobbing..... | 5 90 @ 6 10 |
| Oregon, Bakers' extra..... | 5 50 @ 5 75 |
| Walla Walla, Bakers' extra..... | 5 50 @ 5 75 |

Barley.

Immediately following last review, the bears in the speculative market dealt some heavy blows to values for this cereal, but some of the blows proved boomerangs, hitting the buyers harder than they did those they were hurled against. In two days December barley was hammered down 10 cents per cental, selling as low as \$1.16 on Friday of last week, with May option, the equivalent of spot barley in the open market, ranging from \$1.20 @ 1.27. The spot market was at same time demoralized, but there was so little business in actual grain that values for the same were poorly defined. The recovery Saturday and Monday was almost as sharp and pronounced as had been the previous decline. In the reaction the December option was brought up to \$1.24. In the sample market the lowest sales which could be traced were at \$1.20 1/2, this figure being for a very common article. For the most select feed, however, \$1.30 was the utmost justified as a quotation. Brewing grades continued inactive, leaving values for this description difficult to state. The market Tuesday and today was fairly steady.

| | |
|---------------------------------|-----------------|
| Feed, No. 1 to choice..... | 1 37 1/2 @ 1 30 |
| Feed, fair to good..... | 1 25 @ 1 27 1/2 |
| Brewing, No. 1 to choice..... | 1 32 1/2 @ 1 40 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

| |
|---|
| May, 1898, delivery, \$1.27 @ 1.26 |
| December, 1898, delivery, \$1.25 @ 1.16 |
| Wednesday at regular noon session of the Call Board May, 1898, feed sold at \$— @ — |
| Dec., 1898, \$1.21 @ 1.21 1/2 |

Oats.

The market has ruled quiet in this center since last review, and has presented a rather easy tone, despite telegraphic advices of a corner having been effected in Canada by Chicago operators, causing there a sharp advance in values. There were no large receipts here during the week, but stocks in store were more than ample for the requirements. Inquiry which existed was mainly for the cheaper grades, which could be most successfully used instead of barley.

| | |
|-------------------------------|---------------------|
| White Oats, fancy feed..... | 1 40 @ — |
| White, good to choice..... | 1 35 @ 1 37 1/2 |
| White, poor to fair..... | 1 30 @ 1 32 1/2 |
| Gray, common to choice..... | 1 32 1/2 @ 1 37 1/2 |
| Milling..... | 1 37 1/2 @ 1 40 |
| Surprise, good to choice..... | 1 37 1/2 @ 1 42 1/2 |
| Black Russian..... | — @ — |
| Red..... | — @ — |

Corn.

Supplies in the spot market are mainly Eastern product, but there is less of this description now offering than there was a fortnight ago. Arrivals of Eastern corn have been lately rather light, owing to higher freight rates and some hardening of prices at primary points. The domestic article was in light stock, but not much was required to accommodate buyers at the rather high prices asked.

| | |
|----------------------------------|-----------------|
| Large White, good to choice..... | 1 10 @ 1 15 |
| Large Yellow..... | 1 10 @ 1 15 |
| Small Yellow..... | 1 25 @ 1 30 |
| Eastern Yellow..... | 1 07 1/2 @ 1 15 |
| Egyptian White..... | — @ — |
| Popcorn, shelled, B..... | — @ — |

Rye.

A little easier market is noted than has been lately experienced, with inquiry light and no special competition among buyers.

| | |
|--------------------------|---------------------|
| Good to choice, new..... | 1 37 1/2 @ 1 38 1/2 |
|--------------------------|---------------------|

Buckwheat.

There is not enough of this cereal offering to enable the giving of more than nominal quotations.

| | |
|---------------------|-------------|
| Good to choice..... | 1 80 @ 1 85 |
| Silverskin..... | — @ — |

Beans.

There has been no great activity observable in this market since last review. The general tone has continued much the same, asking figures being without appreciable change. Buyers showed no disposition to take hold freely at full current rates and were not able to purchase at materially lower prices. Some attempts were made to depress values, but were wholly unsuccessful. Seeding land for coming crop is now in progress in the Sacramento river section, where the acreage devoted to beans will be larger than last year. All advices from the southern part of the State confirm previous reports that there will be few beans grown there this season.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 85 @ 2 10 |
| Small White, good to choice..... | 1 90 @ 2 15 |
| Lady Washington..... | 1 90 @ 2 10 |
| Butter, small..... | 1 60 @ 1 75 |
| Butter, large..... | 1 75 @ 1 90 |
| Pinks..... | 2 65 @ 2 75 |
| Bayos, good to choice..... | 2 90 @ 3 10 |
| Reds..... | 2 75 @ 3 00 |
| Red Kidneys..... | 2 90 @ 3 00 |
| Limas, good to choice..... | 3 00 @ 3 10 |
| Black-eye Beans..... | 3 30 @ 3 50 |
| Horse Beans..... | 1 30 @ 1 40 |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

Recent advices from New York by mail furnish the following concerning the bean market on the Atlantic side, prices quoted helug per bushel of 60 lbs.:

Business in regular channels has been very slack again this week. Home jobbers bought heavily on the recent advance, and have not been operating for some days past, and the export trade with Cuba and Porto Rico is entirely suspended. The Government demands have been of some importance. A little over 500 barrels of Marrow were called for by the Navy Department, and 300,000 lbs of small white beans—California Lady Washington—were taken for the land forces. There have been increased receipts, however, and with some offerings by speculative buyers who secured stock at a much lower price, the market has declined a little from the figures quoted a week ago. Best marks of Marrow are now easily bought at \$1.75 in a small way, and good size can be shaded 2 1/2 @ 3c. Medium and Pea have fallen 50c and are unsettled at the close. Choice Medium are held by some at \$1.45, but others are accepting \$1.40. Peas are offering freely at \$1.40, and we hear of sales of round lots at \$1.35. While the quantity of Red Kidney moved this week has been comparatively small, the absence of pressure to sell has kept choice lots about steady at \$2.10; some very good stock has sold to dealers at \$2; scarcely any inquiry for White Kidney or Turtle Soup. Yellow Eye are also dull and easy. Lima have weakened a little and best lots are now selling generally at \$2.15. Green peas have further declined and close weak.

Dried Peas.

The inactivity last noted continues to prevail, more due to lack of offerings than absence of demand. Choice could be placed to fair advantage.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 90 @ 2 00 |
| Niles Peas..... | 1 65 @ 1 75 |

Wool.

Market remains lifeless, and affords nothing upon which to base quotations for 1898 wools. Never before, within the recollection of those now in the trade, has such prolonged dullness been experienced. While it is partly the result of the pending struggle with Spain handicapping Eastern manufacturers, it is more directly attributable to the free trade policy from which this country is supposed to have lately emerged, but on account of which the wool interest is still suffering. During the latter part of the free trade administration wools and woolen goods were landed here in such immense quantities and against future needs that if the same principle is established during the next administration, the wool interest will have little or no chance to receive the full benefits supposed to have been accorded it by the protective measures now in force. All of the recent heavy failures among wool dealers and manufacturers are wholly attributable to their trying to carry more free trade wool on borrowed money than they could stagger under.

| | |
|-----------------------------------|-------------|
| Oregon Eastern, choice..... | 12 @ 14 1/2 |
| Oregon Eastern, fair to good..... | 10 @ 11 |

| | |
|------------------------|---------|
| Northern, free..... | 11 @ 13 |
| Southern Mountain..... | 9 @ 12 |

Hops.

Market is as devoid of firmness as previously noted, and there is nothing of consequence doing on local account. The last steamer for Australia took about 300 bales, but whether these were sold or consigned is not stated. Very probably the latter. As the season is now far advanced, there is little or nothing upon which to base hopes for a revival of trade for 1897 hops. Quotations remain unchanged, but values are largely nominal.

| | |
|--------------------------------|---------|
| Good to choice, 1897 crop..... | 10 @ 13 |
|--------------------------------|---------|

A New York authority, under late date, outlines the hop market as follows, the report coming through by recent mail:

Very little business is accomplished from day to day, and the extreme dullness of trade naturally causes weakness and depression. No important reduction can be made in quotations, but values must be considered largely nominal, particularly for the common and medium grades. Brewers seem

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The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

to have sufficient supplies for current needs; their purchases are small and there are not many of them. Brokers report an occasional sale to dealers, but the latter are holding fair stocks and will not add to them except when real bargains are offered. Exporters are not interested. English cable advices report steady markets for fine grades, but increasing weakness of poor qualities, which are very dull. More work has been done in the hop yards of this State during the past week, and conditions so far as reported are reasonably good. In California there is great need of rain. Crop reports from both Oregon and Washington are generally favorable. An error in last week's report gave the stock of hops in Oregon as 1000 bales—it should have been 10,000 bales, of which less than one-half are fit for use.

Hay and Straw.

New hay is now arriving in sufficient quantity to admit of giving regular quotations for the same. Old hay is still coming forward, and for strictly choice wheaten tolerably stiff figures are being realized. For common grades, however, both new and old, the tendency of values is in favor of the buying interest, with prospects of prices going lower in the near future. Straw will soon be more plentiful and market in consequence presents a weak tone.

| NEW HAY. | |
|--------------|---------------|
| Wheat..... | 17 00 @ 20 00 |
| Barley..... | 15 00 @ 16 00 |
| Oat..... | 15 00 @ 16 00 |
| Alfalfa..... | 12 00 @ 13 00 |

| OLD HAY. | |
|--------------------|---------------|
| Wheat..... | 19 00 @ 23 50 |
| Wheat and Oat..... | 18 00 @ 22 00 |
| Oat..... | 17 00 @ 19 00 |
| Barley..... | — @ — |
| Timothy..... | 15 00 @ 18 00 |
| Alfalfa..... | 12 00 @ 13 00 |
| Compressed..... | 19 00 @ 23 00 |
| Straw, bale..... | 75 @ 1 00 |

Further reductions have been effected in values for Bran and Middlings. In numerous instances concessions were made to buyers of Rolled Barley and Milled Corn.

| | |
|---------------------|---------------|
| Bran, 1/2 ton..... | 16 50 @ 17 50 |
| Middlings..... | 18 50 @ 23 00 |
| Barley, Rolled..... | 26 50 @ 27 50 |
| Cornmeal..... | 24 00 @ 24 50 |
| Cracked Corn..... | 25 00 @ 25 50 |

Little doing in this department. The kinds which might be placed to tolerably good advantage, notably Mustard and Flax Seed, are not on market in sufficient quantity to admit of any noteworthy trading. Alfalfa is wholly neglected, although there is considerable still on market. Trading in Bird Seed is light and within range of same quotations last noted.

| Per cwt. | |
|----------------------------|---------------|
| Mustard, Yellow..... | 3 75 @ 4 00 |
| Mustard, Trieste Seed..... | 4 00 @ 4 25 |
| Mustard, Wild Brown..... | 2 75 @ 3 25 |
| Flax..... | 2 25 @ 2 40 |
| Canary..... | 2 1/2 @ 2 3/4 |
| Rape..... | 2 1/4 @ 2 3/4 |
| Hemp..... | 2 1/2 @ 3 1/4 |
| Alfalfa, Utah..... | — @ — |

Bags and Bagging.

Market for Grain Bags is dull, and does not give promise of showing much life for some time to come. Rates asked are on the same low plane as previously quoted. Wool Sacks are in ample supply and are offering at easy figures. Other bags and bagging are without quotable change.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, 22x36, spot..... | 5 1/4 @ — |
| State Prison bags, per 100..... | 4 85 @ — |
| Wool sacks, 4 lb..... | 30 @ — |
| Wool sacks, 3 1/2 lb..... | 27 @ — |
| Gunnies..... | 9 1/4 @ 10 |
| Beam bags..... | 4 1/2 @ 4 3/4 |
| Fruit sacks, cotton..... | 5 1/4 @ 6 |

Hides, Pelts and Tallow.

A good demand is being experienced for Hides, with market firm at prevailing rates, although values are relatively better here for the selling interest than they are in the East. Pelts are ruling fairly steady, with arrivals less excessive than a few weeks ago. Tallow is meeting with tolerably good custom at ruling figures.

Business is necessarily restricted on account of the very limited stocks. The small quantities of honey now in store are principally comb. The output of honey in this State the current year, either of Comb or Extracted, must prove very light. Values are being well maintained, but in quotations there are no changes to record.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 5 1/4 @ 6 |
| Extracted, Light Amber..... | 4 1/4 @ 5 1/4 |
| White Comb, 1-lb frames..... | 8 1/4 @ 10 |
| Amber Comb..... | 6 1/4 @ 7 1/4 |

Not much on market, but demand is so light that transfers at satisfactory figures are difficult to effect.

| | |
|---------------------------|---------|
| Fair to choice, 1 lb..... | 23 @ 25 |
|---------------------------|---------|

Live Stock and Meats.

Market for Beef was in a little better shape for the selling interest than for some weeks preceeding, but the improvement was not sufficient to warrant an advance in quotable rates. Mutton sold to fair advantage,

Some men won't advertise when they are busy—think it will last forever.
Some men won't advertise when times are dull—think the crack of doom is just about to the city line.
There are others who advertise all the time.
The latter attract inquiries and orders, and in good times can pick what they want.
In dull times they get all there is going—the other fellow is out of business.
One is an optimist in prosperity, a pessimist in adversity, and a narrow-gauge weakling all the time.
The other is just a plain, common-sense business man.

Two Kinds of Men.

WHICH KIND ARE YOU?

with supplies of choice not specially excessive. Hog market continued firm for desirable stock, with demand fully up to the supply.

Beef, 1st quality, dressed, net $\frac{1}{2}$ lb. 6 @ $\frac{1}{2}$
Beef, 2d quality 5 @ $\frac{1}{2}$
Beef, 3d quality 4 @ $\frac{1}{2}$
Mutton—ewes, $\frac{7}{8}$ to $\frac{1}{2}$ c; wetbers. 8 @ —
Hogs, hard grain fed, medium $\frac{1}{4}$ @ $\frac{1}{4}$
Hogs, small $\frac{3}{4}$ @ $\frac{1}{4}$
Hogs, large hard $\frac{3}{4}$ @ $\frac{1}{4}$
Hogs, soft $\frac{2}{4}$ @ $\frac{1}{4}$
Hogs, stock 2 @ —
Hogs, country dressed $\frac{1}{4}$ @ $\frac{1}{4}$
Veal, small, $\frac{1}{2}$ lb. 6 @ 7
Veal, large, $\frac{1}{2}$ lb. 5 @ 6
Lamb, Spring, $\frac{1}{2}$ lb 8 @ —

Poultry.

The market for nearly all descriptions of poultry has ruled against sellers the past week, the only noteworthy exceptions being for large Young Chickens in fine condition. Big Young Roosters without sign of spur were scarce and wanted. Common Old Hens, as also Old Ducks and Geese, dragged badly.

Turkeys, live hens, $\frac{1}{2}$ lb. 10 @ 11
Turkeys, live gobblers 10 @ 11
Hens, Cal., $\frac{1}{2}$ doz. 2 @ 50 @ 3
Roosters, old 3 @ 50 @ 25
Roosters, young, (full-grown) 7 @ 50 @ 8
Fryers 5 @ 50 @ 6
Broilers, large 3 @ 50 @ 4
Broilers, small 2 @ 50 @ 3
Ducks, young, $\frac{1}{2}$ doz. 3 @ 50 @ 5
Ducks, old 3 @ 50 @ 3
Geese, $\frac{1}{2}$ pair 75 @ 100
Goslings, $\frac{1}{2}$ pair 1 @ 100 @ 25
Pigeons, Old, $\frac{1}{2}$ doz. 1 @ 100 @ 25
Pigeons, Young 1 @ 25 @ 50

Butter.

Market has tended slightly in buyers' favor, especially for creamery product, the latter being in better supply than dairy. Improved prospects for green feed and the arrival of Eastern butter combined to impart an easier tone. Butter is also arriving in considerable quantity from Oregon and Nevada, which tends to prevent prices moving upwards. Values must naturally be governed more or less by cost of laying down butter from outside points, but there is no likelihood of the unprofitably low figures of some former years being established this season.

Creamery extras, $\frac{1}{2}$ lb. 20 @ —
Creamery firsts 19 @ 19 $\frac{1}{2}$
Creamery seconds 19 @ 19
Dairy select 19 @ 19 $\frac{1}{2}$
Dairy seconds 18 @ —
Dairy, soft and weedy — @ —
Mixed store 16 @ 17
Creamery in tubs 19 @ 22
Firkin, Cal., choice to select 19 @ 21
Firkin, common to fair 17 @ 18

Cheese.

Values remain in same quotable position as noted in previous review, but market cannot be termed firm. In a small way, a few favorite marks are commanding tolerably good prices; but to effect free sales of the ordinary run of offerings the acceptance of lower figures than quoted would be necessary.

California fancy flat, new $\frac{9}{16}$ @ $\frac{9}{16}$
California, good to choice $\frac{8}{16}$ @ $\frac{9}{16}$
California, fair to good 8 @ $\frac{8}{16}$
California Cheddar 10 @ 11
California, "Young Americas" 10 @ 11

Eggs.

The advanced prices of previous week resulted in bringing out Eastern eggs more freely and diverting considerable trade to the latter. Especially are large bakeries, hotels and restaurants running more on Eastern than on home product. While market for domestic is less active than at date of last review, it is not quotably lower.

California, select, large white and fresh 16 @ —
California, select, irregular color & size 14 @ 15
California, good to choice store 13 $\frac{1}{4}$ @ 14 $\frac{1}{4}$
Eastern, as to section and grading 13 $\frac{1}{4}$ @ 15

Vegetables.

It was the exception where arrivals of spring vegetables were excessive, or where the market displayed great weakness. Asparagus, peas, beans and rhubarb all brought good average prices. Red onions were in increased receipt and went at rather low figures.

Asparagus, No. 1 to choice, $\frac{1}{2}$ box 1 @ 75 @ 250
Asparagus, common to fair, $\frac{1}{2}$ box 1 @ 100 @ 150
Beans, String, $\frac{1}{2}$ lb. 10 @ 12 $\frac{1}{2}$
Beans, Lima, $\frac{1}{2}$ lb. — @ —
Beans, Refugee, $\frac{1}{2}$ lb. — @ —
Beans, Wax, $\frac{1}{2}$ lb. 8 @ 10
Cabbage, choice garden, $\frac{1}{2}$ 100 65 @ 75
Cauliflower, $\frac{1}{2}$ doz. 50 @ —
Corn, Green, sack — @ —
Corn, Alameda, $\frac{1}{2}$ crate — @ —
Cucumbers, $\frac{1}{2}$ box 1 @ 25 @ 175
Egg Plant, $\frac{1}{2}$ lb. 15 @ 20
Garlic, $\frac{1}{2}$ lb. 5 @ 6
Mushrooms, Buttons, $\frac{1}{2}$ lb. — @ —
Mushrooms, Wild, $\frac{1}{2}$ lb. — @ —
Okra, Dried, $\frac{1}{2}$ lb. 12 $\frac{1}{2}$ @ 15
Onions, Yellow, good to choice — @ —
Onions, New Red 40 @ 50
Peas, Sweet, Garden, $\frac{1}{2}$ lb. 2 @ 24
Peas, Sweet, $\frac{1}{2}$ sack 1 @ 100 @ 125
Peppers, Green Chile, $\frac{1}{2}$ lb. 15 @ 20
Rhubarb, ordinary, $\frac{1}{2}$ box 40 @ 50
Rhubarb, Mammoth, $\frac{1}{2}$ bx 60 @ 75
Squash, Summer, $\frac{1}{2}$ lb. 5 @ 7 $\frac{1}{2}$
Tomatoes, $\frac{1}{2}$ box or crate 1 @ 50 @ 200

Potatoes.

With only moderate arrivals of old potatoes, and the season for new not yet fairly open, the market for desirable qualities of Burbanks inclined in favor of sellers most of the week. Offerings of old were principally from Oregon. New were in very light receipt and choice commanded stiff prices.

Burbanks, River, $\frac{1}{2}$ sack 50 @ 75
Burbanks, Petaluma and Tomales, $\frac{1}{2}$ cti 50 @ 75
Burbanks, Humboldt, $\frac{1}{2}$ otl 70 @ 10
Burbanks, Oregon, $\frac{1}{2}$ central 65 @ 100
Garnet Chilo, Oregon — @ —
New Potatoes, in sacks, $\frac{1}{2}$ central 1 @ 25 @ 25
New Potatoes, River, in boxes, $\frac{1}{2}$ central 1 @ 25 @ 175
Sweet River, $\frac{1}{2}$ central — @ —
Sweet Merced 1 @ 100 @ 25

The Fruit Market.

Fresh Fruits.

The list as to variety remains about the same as given in former review, but the quantity arriving is materially larger in the aggregate than previous week, and values are at a lower range, although in most instances tolerably good figures are being realized,

especially when qualities and prices are compared with those of previous seasons. Apricots of the early Pringle variety are not coming forward in heavy quantity, but not many are required to satisfy the demand for this fruit. The later varieties—Royals, Blenheims and Moorpark— invariably meet with more favor. Royals will probably put in an appearance in quotable quantity the coming week, but this being an off year with Apricots, the arrival of all varieties will doubtless prove light. A few Royals arrived yesterday from Vacaville and were held at \$1.12.5 per box, but they were too green to be desirable. Cherries of ordinary quality were fairly plentiful, such going at rather low figures, while choice to select were in such light receipt as to be hardly quotable in a regular way. The latter were salable at an advance on utmost figures warranted as a quotation. Blackberries and Raspberries arrived quite sparingly, but failed to bring what could be termed fancy prices. Gooseberries were mostly too small to be especially sought after, and in consequence figures realized were at a tolerably low and narrow range. Strawberries were in fair receipt and tolerably good demand, but prices kept within very reasonable bounds for consumers. Some were auctioned off at ridiculously low figures, and less than lowest prices below noted. Apple quotations are for stock of previous season, which is still offering in a moderate way.

Apricots, Pringle, $\frac{1}{2}$ box 50 @ 75
Apples, fancy, 4-tier, $\frac{1}{2}$ box 1 @ 35 @ 150
Apples, choice, 4-tier, $\frac{1}{2}$ box 1 @ 100 @ 125
Apples, fair to good, 50-lb box 60 @ 75
Apples, common to fair, $\frac{1}{2}$ box 50 @ 60
Cherries Black, in bulk, $\frac{1}{2}$ lb. 4 @ 5
Cherries White, in bulk, $\frac{1}{2}$ lb. 3 @ 5
Cherries, Black, fair to choice, $\frac{1}{2}$ box 40 @ 65
Cherries, White and Red, $\frac{1}{2}$ box 1 @ 100 @ 125
Blackberries, $\frac{1}{2}$ crate 1 @ 100 @ 25
Raspberries, $\frac{1}{2}$ crate 1 @ 100 @ 25
Gooseberries, $\frac{1}{2}$ lb. 1 $\frac{1}{4}$ @ 2 $\frac{1}{4}$
Strawberries, Longworth, $\frac{1}{2}$ chest 3 @ 50 @ 500
Strawberries, Large, $\frac{1}{2}$ chest 2 @ 100 @ 350

Dried Fruits.

Market for cured and evaporated fruits has been ruling more quiet than for a week or two preceding, but the general tone continues healthy. There is no quotable decline to record in values for any description. Stocks of most kinds of tree fruit are now down to insignificant proportions. Peaches and Prunes being about the only noteworthy exceptions. Offerings of these two varieties are of very moderate proportions, and are being quite steadily held, with prospects favorable for a clean-up before new fruit begins to put in an appearance. Peaches and Prunes are now mainly in second hands. Apricots are virtually out of stock. There are a few here and there in the hands of jobbers which are being held in the main for better prices than are now quotable. Apricots of this season's curing will likely be on market in moderate quantity the coming month.

EVAPORATED OR BLEACHED.

Apricots, Royal, $\frac{1}{2}$ box 1 @ 100 @ 125
Apricots, Royal, in sacks, per lb. 6 @ 7
Apricots, Royal, fancy 7 $\frac{1}{2}$ @ 8 $\frac{1}{4}$
Apricots, Moorpark 8 @ 10
Apples, in boxes 6 $\frac{1}{2}$ @ 7
Figs, fancy pressed 8 @ 10
Nectarines, White 3 $\frac{1}{2}$ @ 4
Nectarines, Red 3 $\frac{1}{2}$ @ 4
Peaches, unpeeled, choice 4 $\frac{1}{2}$ @ 5
Peaches, unpeeled, fancy 5 $\frac{1}{2}$ @ 6
Peaches, peeled, in boxes 9 @ 12
Pears, unpeeled Bartlett's, fancy 7 @ —
Pears, halved, unpeeled Bartlett's 4 $\frac{1}{2}$ @ 5
Pears, quartered, unpeeled Bartlett's 4 @ 5
Pears, peeled and sliced — @ —
Plums, pitted 4 @ 5
Prunes, in sacks, 40-50's 5 $\frac{1}{2}$ @ 6
50-60's 4 $\frac{1}{2}$ @ 4 $\frac{1}{2}$
60-70's 3 $\frac{1}{2}$ @ 3 $\frac{1}{2}$
70-80's 3 @ 3 $\frac{1}{2}$
80-90's 2 $\frac{1}{2}$ @ 3
90-100's 2 $\frac{1}{2}$ @ —
Above figures are on basis of 3 $\frac{1}{4}$ @ 3 $\frac{1}{4}$ for 4 sizes. Prunes in boxes, $\frac{1}{2}$ c higher for 25-lb boxes, $\frac{1}{2}$ c higher for 50-lb boxes.
4 sizes Santa Claras and equal 3 $\frac{1}{2}$ @ —
4 sizes San Joaquin and Northern 3 @ —
Prunes, Silver 4 @ 7

COMMON SUN-DRIED.

Apricots, ordinary 5 @ 6
Apples, sliced 4 @ 4 $\frac{1}{2}$
Apples, quartered — @ —
Figs, Black 2 @ 3 $\frac{1}{2}$
Figs, White 3 @ 4
Peaches, unpeeled 3 $\frac{1}{2}$ @ 4
Plums, unpitted 1 @ 1 $\frac{1}{2}$

The following review of the dried fruit market in the East is furnished by recent mail from New York:

The market has shown no change this week. Evaporated apples are in light supply, and with demand active market continues firm on the basis of 9 @ 9 $\frac{1}{2}$ c for prime wire-dried and 9 $\frac{1}{4}$ @ 9 $\frac{1}{2}$ c for prime wood-dried; choice and fancy range from 9 $\frac{1}{2}$ @ 10 $\frac{1}{2}$ c; grades below prime have been pretty well cleaned up. Desirable grades of sun-dried apples are held with considerable confidence at full late figures. Chops firm and higher, sales having been reported up to $\frac{1}{2}$ c, though that figure is rather extreme. Cores and skins steady, though top quotations full. Raspberries have had a little more attention and most sales at outside figures. Other small fruits in few hands and held steady at late prices. California fruit continues in active demand and firm at the advance quoted.

Apricots, Cal. Moorpark, 1897, per lb. 8 @ 12
Apricots, Cal. Royal, 1897, per lb. 7 $\frac{1}{2}$ @ 8 $\frac{1}{2}$
Peaches, Cal., 1897, peeled, per lb. 10 @ 16
Peaches, Cal., 1897, unpeeled, per lb. 5 @ 9
Pears, Cal., 1897, per lb. 5 @ 10
Prunes, Cal., 1897, per lb. 3 $\frac{1}{2}$ @ 8

Raisins.

There is no change to note in quotable rates or the general tone. High grade raisins are not readily obtained, choice boxed stock being especially in very limited supply. Common qualities of loose Muscatel are still fairly plentiful and such continue to be offered at easy rates, jobbers seeking custom for 2-crown at 2c.

Boxes, London layers, 20-lb box 1 @ 100 @ —
(Usual advance for fractions.)
Loose Muscatel, 4-crown, $\frac{1}{2}$ lb. 3 $\frac{1}{2}$ @ —
Loose Muscatel, 3-crown 2 $\frac{1}{2}$ @ 2 $\frac{1}{2}$
Loose Muscatel, 2-crown 1 $\frac{1}{2}$ @ 2
Sultanas, $\frac{1}{2}$ lb. 3 @ 3 $\frac{1}{2}$
Seedless Muscatel 1 $\frac{1}{2}$ @ 2
Dried Grapes 1 @ 1 $\frac{1}{2}$

Citrus Fruits.

Oranges are in light supply, as is generally

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the case at this date. Choice to select Navel are ruling higher than last quoted, but there is not much inquiry for the fruit at current figures. Lemons are in ample stock for all current needs. Quotable rates are without change, but market is lacking in firmness, particularly for other than strictly select. Lime market is showing steadiness, with stocks of only moderate volume and in few hands.

Oranges—Navel $\frac{1}{2}$ box 1 @ 50 @ 3 @ 00
St. Michaels — @ —
Seedlings 75 @ 1 @ 25
Tangerines, half box 85 @ 1 @ 00
Lemons—Cal., select, $\frac{1}{2}$ box 1 @ 75 @ 2 @ 00
Cal., good to choice 1 @ 100 @ 1 @ 50
Cal., common to good 75 @ 1 @ 00
Limes—Mexican, $\frac{1}{2}$ box 4 @ 00 @ 4 @ 50
Cal., small box 75 @ 1 @ 00

Nuts.

Market is very quiet, and it would be phenomenal to have it otherwise at this time of year. There are very few Almonds to be had at any figure. Walnuts now offering are almost without exception more or less defective. Peanuts are being very steadily held.

California Almonds, paper shell 9 @ 10
California Almonds, soft shell 6 @ 8
California Almonds, hard shell 4 @ 4 $\frac{1}{2}$
Walnuts White, paper shell 6 @ 7
Walnuts White, soft shell 6 @ 7
Walnuts White, Cal., standard 5 @ 6
Chestnuts, Cal. Italian — @ —
Peanuts, Cal., fair to prime 4 @ 4 $\frac{1}{2}$
Peanuts, Eastern hand-picked 5 @ 6
Pine Nuts 7 @ 8

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------------------|--------------------|----------------------|
| Flour, $\frac{1}{2}$ -sks. | 107,765 | 4,779,447 |
| Wheat, cts. | 160,339 | 10,147,889 |
| Barley, cts. | 53,002 | 4,432,823 |
| Oats, cts. | 21,928 | 657,256 |
| Corn, cts. | 12,600 | 352,028 |
| Rye, cts. | 1,490 | 46,236 |
| Beans, sks. | 7,102 | 552,387 |
| Potatoes, sks. | 21,608 | 1,053,454 |
| Onions, sks. | 3,575 | 103,326 |
| Hay, tons 1,992 | 116,976 | 131,831 |
| Wool, hales 1,423 | 67,554 | 75,307 |
| Hops, hales 168 | 8,849 | 7,365 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------------------|--------------------|----------------------|
| Flour, $\frac{1}{2}$ -sks. | 24,004 | 3,081,080 |
| Wheat, cts. | 62,768 | 9,712,989 |
| Barley, cts. | 5,570 | 2,904,464 |
| Oats, cts. | 772 | 18,542 |
| Corn, cts. | 1,931 | 43,534 |
| Beans, sks. | 1,253 | 301,080 |
| Hay, hales 1,817 | 75,427 | 66,998 |
| Wool, lbs. | 14,241,776 | 16,628,249 |
| Hops, lbs. | 64,674 | 1,380,442 |
| Honey, cases. 17 | 7,438 | 2,781 |
| Potatoes, pkgs. 1,190 | 182,392 | 77,738 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of the THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

New York, May 25.—California dried fruits firm; apples steady. Evaporated apples, common, 7 $\frac{1}{2}$ @ 8 $\frac{1}{2}$ c; prime wire tray, 8 $\frac{1}{2}$ @ 9 c; wood dried prime, 9 @ 9 $\frac{1}{2}$ c; choice, 9 $\frac{1}{2}$ @ 10 c; fancy, 9 $\frac{1}{2}$ @ 10 c. Prunes, 1 @ 8 $\frac{1}{2}$ c. Apricots, Royal, 8 @ 10 c; Moorpark, 10 @ 12 c. Peaches, unpeeled, 6 @ 8 c; peeled, 12 @ 14 c.

Eastern Sales of California Fruit.

CHICAGO, May 19.—The Earl Fruit Company sold California cherries to-day as follows: Royal Anne, \$1.55; Black Tartarian, 65c to \$1.05.

Porter Bros. Company sold California cherries to-day as follows: Tartarian, 65c to \$1.05; Big-reau, 95c.

New York, May 20.—Porter Bros. Company sold to-day: Cherries—Royal Anne, \$2.10 to \$5.63 per box; Tartarians, 60c to \$2.55; Rockports, 55c to \$2.30; Cleveland, 65c to \$1.10; other varieties, 40c to 65c. Apricots—Pringles, \$1.50 to \$1.70 per single crate.

CHICAGO, May 23.—Porter Bros. Company sold to-day: Cherries—Centennials, \$2.40 per box; Royal Anne, \$1.15 to \$1.95; Tartarians, 55c to \$1.30; mixed, \$1.30; other varieties, 40c to 80c. Apricots—Newcastle, \$1.60 per single crate; Pringles, \$1.35 to \$1.50. Plums—Cherry, 30c per 11-pound box.

New York, May 23.—The Earl Fruit Company sold California cherries at open auction here to-day, calling prices as follows: Black Tartarian, 65c to \$1.05; Royal Anne, 1.35 to \$2.40; Chapman, \$1.05. At Philadelphia—Black Tartarian, 55c to \$1.05, some poor condition. At Minneapolis—Black Tartarian, 65c. At Boston—Royal Anne, \$1.60 to \$3; Mastodons, \$1.35; Tartarians, \$1.60; Belle Crowns, 90c to \$1.02; Rockports, 30c to 80c; Pon-

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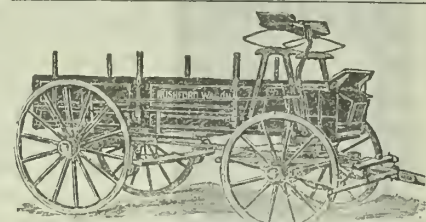
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tiacs, 70c. Apricots—Pringles, \$1.10 to \$1.55 per crate.

NEW YORK, May 24.—Porter Brothers Co. sold to-day: Cherries—Tartarian, 55c @ 95c; Centennial, 85c @ \$1.60; Governor Wood, 65c.

The Earl Fruit Co. sold to-day: Cherries—Centennial, 85c @ \$1.30; Black Tartarian, 55c @ \$1.25.



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| No. | Axle. | Tire. | Capacity. |
|-----|--------------------------------|---------------------|------------|
| 47 | 2 $\frac{1}{2}$ Hollow Steel. | 2 inch. | 2,500 lbs. |
| 47 | 2 $\frac{1}{2}$ " " | 3 " " | 2,500 " " |
| 48 | 2 $\frac{1}{2}$ " " | 2 " " | 4,000 " " |
| 49 | 2 $\frac{1}{2}$ " " | 2 " " | 5,000 " " |
| 49 | 2 $\frac{1}{2}$ " " | 2 $\frac{1}{2}$ " " | 5,000 " " |
| 50 | 2 $\frac{1}{2}$ " " | 3 " " | 6,500 " " |
| 51 | 3 $\frac{1}{2}$ " " | 3 " " | 8,000 " " |
| 52 | 3 $\frac{1}{2}$ " " | 3 " " | 10,000 " " |
| 38 | 1 $\frac{1}{2}$ Concord Steel. | 3 " " | 4,000 " " |
| 18 | 3 $\frac{1}{2}$ Steel Skeln. | 2 " " | 4,000 " " |
| 19 | 3 $\frac{1}{2}$ " " | 2 $\frac{1}{2}$ " " | 5,000 " " |

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Pictures Endowed With Life.

On Saturday, May 7th, the Seventh Regiment, California Volunteers, marched past the PACIFIC RURAL PRESS office on their way to the Presidio,



SECTION OF FILM (actual size).
A squad of soldiers at drill.

there to be sworn in and prepared for transportation to the Philippines with 7000 more troops to co-operate with Admiral Dewey. As they marched instantaneous photographs were taken, and on Monday, forty-eight hours after, an animated picture of the stirring scene was exhibited, thus illustrating one of the most wonderful achievements of practical science—the ability to swiftly and correctly reproduce one of the opening acts in the great drama of present war.

As pointed out in a recent issue of Popular Science, a new and wonderful field in the realm of photography has lately been opened up to the world—a field whose extent, variety, and richness are as yet scarcely realized, though its assiduous cultivation by inventive minds has already afforded a harvest of interesting results. Aided by ingenious devices, the scientific photographers of to-day are enabled to portray motion in all its varied forms with a realism that impresses the

beholder. They have, in effect, contrived to breathe life into normally changeless records of the camera; and the process is now applied, with marked success to animated scenes of the most diverse description. The busy traffic of city streets, the play of expression upon the human countenance, the movements of waves, waterfalls, fleeting clouds—these and many other effects have been depicted upon the screen with equal fidelity before audiences that have seldom failed to show their appreciation of the novel form of entertainment thus provided.

These striking productions of the photo-

graphic art will doubtless continue to attract the world's attention. They have already become a source of much instructive entertainment to the public; and their usefulness, from this point of view, must be recognized by all. But the invention has other and more serious claims upon our consideration. As a means of permanently recording and vividly illustrating notable events its importance will scarcely be overestimated. The ordinary photography can depict for us only isolated phases in the varied phenomena of life or Nature; though the value of its precise records, from the historian's standpoint, has of course received ample recognition. But the charm of animation may henceforth be added to our portrayals of historic scenes. And, in like manner, we shall be enabled to record the mutable expressions, the gestures and mannerisms, as well as the features, of distinguished men and women; while the value of all such records must increase with the lapse of time.

The subject may be regarded from two very distinct points of view. On the one hand, we are concerned with the ordinary animated pictures, whose

views of the second type. Such pictures have not, says J. M. Barr in the article quoted, been produced up to the present time. This aspect of the subject is interesting and merits careful investigation.

Although the kinetoscope and cinematograph are regarded as distinctively modern contrivances, it should be borne in mind that they represent only the recent development of a principle that has long been familiar to students of optical science. Though differing much in the details of their construction, these various machines are designed to fulfill the same general purpose—viz., the display in rapid sequence of a long series of photographs, which hence convey to the eye and brain the impression of a continuous and animated scene. In the kinetoscope the small pictures are viewed through an enlarging lens by reflected light, whereas in the cinematograph, plantascope, vitascope, etc., they are projected upon a screen—a plan that is obviously best suited to the requirements of a public exhibition.

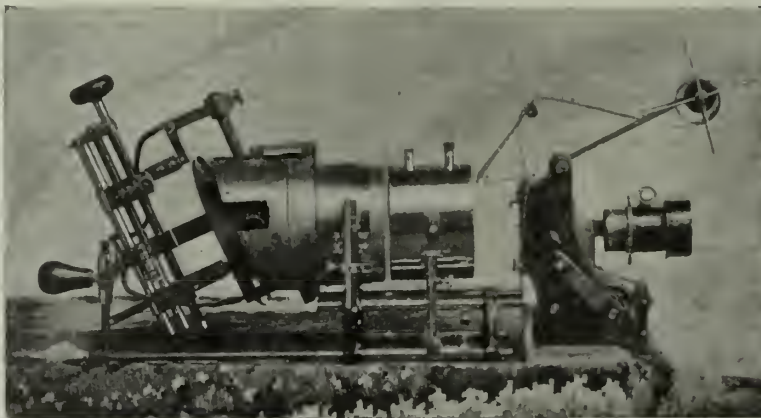
A machine of the last-mentioned type may be shortly described as a stereopticon, combined with such mechanism as is requisite for the precise manipulation of the celluloid picture film. When the apparatus is set in motion the long band of celluloid passes quickly, though not continuously, behind the projecting lens, between spools or bobbins which revolve at a uniform rate. While thus passing from its original spool to the winding reel the film encounters certain pulleys and toothed rollers that serve to accurately direct its movements.

Along its edges are numerous small perforations, into which the teeth of the rollers fit with precision; and by this means the small transparencies are made to occupy exactly similar posi-

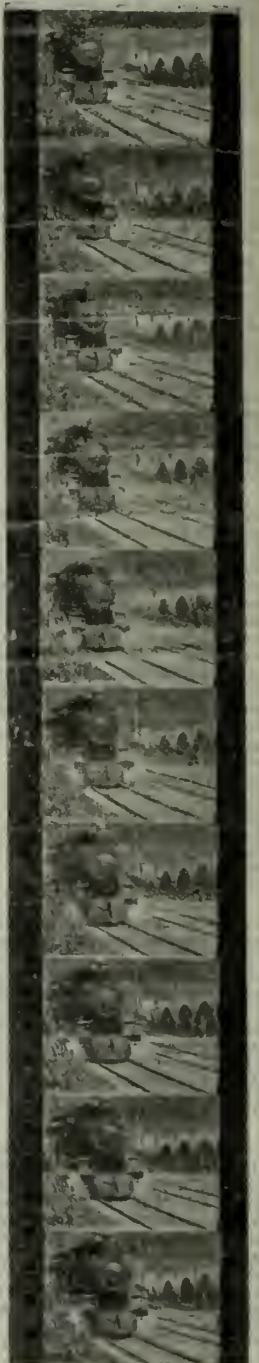


THE JENKINS CAMERA, with rotating system of lenses; capable, in sunlight, of taking one hundred pictures per second.

properties and function are already known to the public; on the other, we have to deal with movements originally imperceptible to the eye, but which can be rendered visible upon a screen if the slow-moving bodies are photographed under conditions described in a subsequent part of this article. Pictures of this kind, may, for convenience, be spoken of as motion



MACHINE FOR PROJECTING ANIMATED PICTURES ON THE SCREEN. The phantoscope, latest model, being an attachment for a J. B. Colt & Co. electric lantern.



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tions when their images are projected upon the canvas. As each picture in its turn attains this critical position, it is momentarily brought to a standstill. At the same time a shutter* is opened and an image of the picture flashes for an instant upon the screen. The shutter is then quickly closed, the picture resuming its motion, while its successor in the series is brought into a similar fixed position.

This temporary stoppage of the film (or of a portion thereof), as each picture attains its proper place behind the projecting lens, is a very essential feature of the process. Let us assume that a picture has arrived at the fixed position already referred to. At the instant of its arrival, a portion of the film on the preceding side of the picture will be in an unstrained or slack position. The "slack" is then taken up by a continuously moving sprocket pulley, whereupon a rod or roller is quickly brought to bear against the now tightened film, pressing it to one side and as quickly releasing it. By this movement the next picture is pulled into its fixed position, while the film is made taut (or nearly so) on the following side of this picture. These operations are repeated continuously until the entire film has passed through the holding device in rear of the lens. The process may be compared, in a general way, with the automatic feeding of a web of paper to an ordinary printing press.

A specially constructed camera is used in taking the negatives from which ultimately motion pictures are obtained. The picture roll is replaced by a reel of sensitized film, upon which the exposures are made in quick succession when the apparatus is set in motion. From twenty-five to fifty photographs are thus "laid on" in a second of time. The films range in length from fifty to two hundred feet, and contain when finished from eight hundred to more than three thousand tiny negatives. After exposure the film is subjected to the usual photographic operations. These are, however, conducted with special arrangements, rendered necessary by the inordinate length of the film. The latter is subsequently made to pass, in contact with a second sensitized film beneath an incandescent lamp, whereby the photographs are impressed or "printed" upon the sensitive surface. This second film in its turn is passed through the various photographic processes. When complete, it is wound upon a spool, and is then ready to be placed in the cinematograph or other machine used in exhibiting the pictures. Here, as already stated, the mechanical arrangements correspond to those employed in taking the negatives. Thus the pictures when displayed before an audience, are seen to flash out in the same rapid sequence in which the original scenes were presented to the "eye of the camera."

A homely illustration may aid the reader in arriving at a perfectly clear comprehension of the subject. Let us take the case of a man who is slowly walking past a high picket fence and gazing intently at some moving object on the other side of the fence. His view will be interrupted at regular intervals by the pickets as they successively encounter his sight. But if he proceed more quickly a seemingly continuous view of the object in question will be obtained, though rapid alterations in its brightness will be manifested. These effects are due to a well-known cause, viz., the persistence of luminous impressions upon the human retina. Thus, our observer's eye retains for a brief period its impressions of each

momentary glimpse that is afforded him under the conditions just described; and the successive visual images become merged into one another, while the rapid fading of these retinal impressions gives rise to the pulsating effect that is familiar to everybody.

The well-known optical phenomena described are closely analogous to those exhibited by the animated pictures. In the former case we have to deal with a moving body; in the latter, with photographs of such bodies; and since the momentary images in the first-mentioned case are practically changeless it is evident that a similar general effect must be produced upon the organ of vision.

We have hitherto been concerned with motion pictures of the ordinary type—those, namely, which reproduce with accuracy the movements of the original scenes. In order to secure this result it is essential that our pictures be "taken" and exhibited at the same rate per unit of time. Where this condition has not been fulfilled, it is manifest that the pictured objects must appear to move either quicker or more slowly than their originals. If the difference in rate be small, its results will hardly be noticeable; if large, a curious but awkward and unnatural effect will be produced. Suppose the mechanism of our camera to be altered in such wise that successive exposures may be made at relatively long intervals of time, while the duration of each exposure can be varied at will. With this end in view the camera should be provided with clockwork capable of running for twenty-four hours continuously. Thus equipped we should be ready to experiment on objects—such as growing plants—whose changes are of too gradual a nature to be perceived by the eye.

If, for example, our pictures were taken at half-hourly intervals and shown at a speed of fifty per second, the apparent rate of growth of the plant would be increased no less than ninety thousand times. A slower rate would evidently correspond to a diminished time interval between successive negatives; and this interval should in all cases be so chosen as to insure gradual (though distinctly perceptible) changes in the resulting pictures.

Such views could not fail to produce an effect at once marvelous, unique, and instructive. As pictured upon the canvas, the plants would grow and develop before the eyes of the onlookers, throwing out leaf upon leaf, and visibly increasing their dimensions. Here and there a flower or flower cluster might make its appearance, the individual blossoms bursting forth suddenly and remaining visible for a brief period only. The process is clearly applicable to greenhouse or indoor plants of every description, from stately palms or tree ferns down to the most delicate mosses or lichens. Thus, the general phenomena of plant growth may be illustrated with a vividness never before realized.

In dealing with subjects of this nature we must take into account the inevitable deterioration of the sensitive films through lapse of time. It will become necessary, in fact, to use shorter films whenever the negative series is much prolonged. Such films could be treated separately, and afterward joined together so as to form one long strip—a procedure involving only a little care and the use of some celluloid solution. From this composite negative film a single uniform roll of pictures would ultimately be obtained by the usual process.

The application of this method to outdoor objects will in general be greatly restricted, owing in part to the variable light and partly also to the influence of wind and weather. Some picturesque effects could, however, be obtained by photographing natural

scenery under varying angles of illumination—especially in mountainous regions and near the time of sunrise or sunset, when the most striking changes would be manifested. Seasonal variations, too, might be illustrated by depicting scenery in a forest from day to day for months in succession.

Turning from the earth to the heavens, we shall see that similar methods are applicable to the most prominent of celestial bodies, viz: the sun. The photographic art has long since been applied with conspicuous success to the glowing solar disk, with its dark spots and brighter patches or "faculae"; and such photographs are now taken from day to day at leading observatories in various parts of the globe. During recent years, moreover, astronomers have contrived to photograph, under conditions, the surroundings of the great luminary—including the chromosphere and prominences, but excepting the corona, which can not as yet be studied in the absence of an eclipse.

The realism of our motion pictures may also be enhanced by imparting to them the quality of relief, as in the stereoscope. We may utilize for this purpose as the lantern stereoscope, whereby stereo views can be shown upon a screen, the pictures being viewed through instruments resembling opera glasses in external appearances. It will be possible in this way to exhibit animated views of every description in distinct stereoscopic relief. Each member of the audience must, of course, be provided with one of the binocular instruments referred to; and it is almost needless to add that the projecting machine, as also the camera used in taking the stereo negatives, must be of duplicate construction.

The phonograph, or graphophone, has frequently been used in combination with machines for the production of motion views. By such means Edison hoped to reproduce the sounds accompanying many scenes with such perfection that it would be possible to represent, for example, the complete performance of a drama with all its accessories. Up to the present time, however, these anticipations have not been realized.

"A MODERN gunner," says an official in the United States army in a recent article, "must be able, while shells are bursting above his head and his comrades are falling around him, to work out a problem like this: 'That ship is three miles off; she is approaching at such and such an angle, her speed is fifteen miles an hour, the forward turret is the place to hit, the wind is strong from 9 o'clock, the temperature is 75 and the barometer is 30.06, I must, therefore, give so many degrees of elevation and allow so many points for windage.' Having done this, he must aim his gun with the greatest rapidity and exactness and fire. If he makes a mistake in any of the factors of his equation, or lays the gun so that the variation of the sight is greater than a fiftieth of an inch, his shot is wasted. If he is right in everything, he may disable the ship he fires at, and by so doing save the city he is protecting." A single load for a 13-inch gun costs about \$1250.

The plans of the Board of Public Works for the improvement of the Sacramento river, Cal., have been approved by the chief engineer and the Secretary of War. The permit was sent from Washington, D. C., on the 19th. This enables the State to carry out its plans for river improvement. They include, among other things, the removal of the Newtown shoals, the building of easements and the construction of wing dams.

*In some forms of apparatus, such as the vitascope and phantascope, the shutter is omitted. The intermittent motion of the film does not seem to mar the continuity of the pictures, which are also more fully illuminated in the absence of a shutter.

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12,000 lbs. Milk Daily. No Trace of Fat.

E. PALMYRA, N. Y., Dec. 8, 1897.

After two years of nearly every day continual use, your No. 1 B U. S. Separator has proven to me without doubt that it has no rival that can compete with it in close skimming, amount of milk handled in a given time, or needs for repairs.

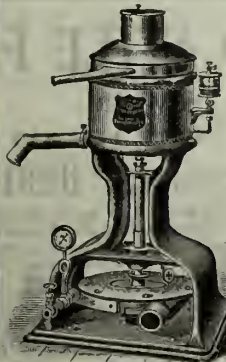
We put through our machine day after day over 12,000 lbs. of milk in a little over six hours, and did not leave hardly a trace of fat in the skim-milk. As to repairs, they have been but trifles. The frame of machine has not been moved since it was set up, or has it changed out of plumb; and bowl runs as smooth to-day as when first started.

I cannot praise the merits of the U. S. Separator too highly. It stands alone and at the top.

A. B. ROBINSON, Prop.

Write for Illustrated Catalogues.

VT. FARM MACHINE CO., Bellows Falls, Vt.



ANTHRAX and BLACK LEG
PREVENTED BY

Pasteur "Vaccines."

Write for particulars, prices, and testimonials of thousands of American stockmen who have successfully used these remedies during the last three years.

PASTEUR VACCINE CO., 54 Fifth Ave., Chicago.

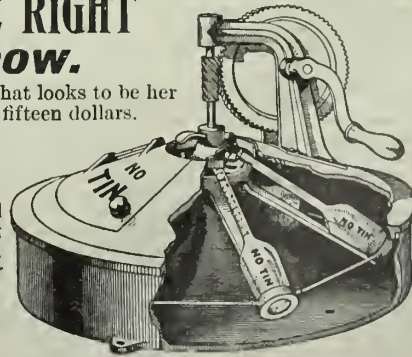
**FIRST KNOW YOU'RE RIGHT
THEN BUY THE COW.**

A good cow is worth sixty dollars; one that looks to be her equal in every respect may be worth but fifteen dollars.

**The NO-TIN
Babcock Tester**

costs complete but ten dollars, and it will tell absolutely and correctly exactly what each cow is worth as a butter producer. Test every cow before you buy her. Send for circulars.

**ELGIN MANUFACTURING CO.,
Elgin, Illinois**



Something New!

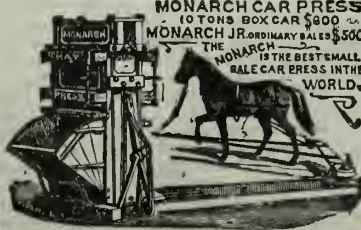
THE 3-4 BALE JUNIOR MONARCH PRESS.

Made extra heavy to meet the growing demand. Guaranteed to load a car to full capacity in ordinary hay.

MONARCH CAR OR SHIP PRESS, bale 17x20x40. \$800 00
JUNIOR MONARCH, 3-4 PRESS, " 20x22x44. \$550 00
JUNIOR MONARCH, STANDARD, " 22x24x47. \$500 00

Manufactured and for Sale by

**L. C. MOREHOUSE, San Leandro, Cal.
WM. H. GRAY, General Agent.**



DEWEY & CO., PATENT AGENTS,

330 Market St., San Francisco, Cal.

Historical Sketch of the Department of Agriculture.

"Historical Sketch of the U. S. Department of Agriculture; Its Objects and Present Organization," compiled by Charles H. Greathouse, of the Division of Publications, is now in press and will soon be issued by the United States Department of Agriculture as Bulletin No. 3, Division of Publications. This bulletin has been prepared in compliance with frequent demands for information regarding the origin and development of the Department.

In the selection of his subjects the compiler has followed as closely as possible the annual reports of the several Commissioners and Secretaries, prominence being given to those features of the work of the different administrations which the administrators themselves appear to have regarded as specially worthy of attention.

The sketch points out that the Department of Agriculture had its origin in the farsighted wisdom of Washington and the practical activity of Franklin, and reviews the early Government aid to agriculture in America, Washington's views as to a Board of Agriculture and the work of American representatives abroad.

This is followed by an account of the formation of an agricultural division in the Patent Office in 1836 by Hon. Henry Ellsworth, the then Commissioner of Patents, and the appropriation by Congress, at his suggestion, of \$1,000 for the purpose of collecting and distributing seed and collecting agricultural statistics.

A brief statement is given of the growth of the work in the Patent Office, the organization of an independent Department and the appointment of the early officials. After referring to the work of the several Commissioners of Agriculture, the raising of the Department on February 9, 1888, to the rank of an Executive Department and the work performed during the administration of each Secretary of Agriculture, the origin and duties of the several bureaus, divisions and offices of the Department are given, together with citations from the laws under which the Department has attained its present stage of development. The bulletin is illustrated, and contains portraits of the several Commissioners and Secretaries of Agriculture.

Coast Industrial Notes.

—The value of the fishery product of the Province of British Columbia in 1897 was \$5,834,764.90.

—The B. C. Legislature has passed a bill forbidding the employment of Chinese and Japanese on all works carried on under a provincial charter.

—The domestic shipments of redwood from Humboldt, Mendocino and Del Norte counties, Cal., during April were 12,789 M. feet; foreign shipments, 1002 M. feet.

—A furniture car made by the N. P. Ry. Co. at its shops in South Tacoma, Wash., will be placed on exhibition in Omaha, as an advertisement of coast lumber. It is 42 feet in length, capacity 70,000 pounds, finished in oil. The car is built of fir, cedar, spruce, and oak in door frames.

—Consul McCunn of Dunfermline, Scotland, writes: "I deem it of sufficient importance to report that California barley received in this consulate is considered of an excellent quality; the malting capabilities are perfect. The preference here for California barley is so marked that it is said a reduction in the price of Scotch barley is sure to follow. American flour, though, is looked upon with suspicion, owing to the fact that it is believed to be mixed with corn, ground exceedingly fine. I have it from unquestionable authority that four out of nine samples of American flour tested within the past three weeks are alleged to contain 10 per cent of corn flour. The high price of wheat and the low price of corn are believed to have led unscrupulous millers to adulterate their flour in this manner.

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven Catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O.

Sold by Druggists, 75c.
Hall's Family Pills are the best.

ner. If this adulteration is not speedily checked, it will expose the American flour trade to great danger, the effects of which will be far reaching."

—A letter from Ecuador says: "As to lumber, I doubt if there is a modern sawmill or planing establishment in the country. Such boards as I have seen made have been sawed out by hand from the logs, one man standing on top of the log and pulling the saw, while another below furnishes the force for the downward strokes. The most of the lumber used on the coast and on this river is brought from Oregon and Puget sound, and it often sells as high as 10 cents a foot. Georgia pine is brought around Cape Horn, a distance, I judge, of about 8000 miles. All imported lumber pays a duty of about 1 cent for every eight pounds, and in addition to this one of 30 per cent ad valorem."

Gained Forty-eight Pounds.

"I had a strong appetite for liquor which was the beginning of the breaking down of my health. I was also a slave to tea and coffee drinking. I took the gold cure, but it did not help me."

This is a portion of an interview clipped from the *Daily Herald* of Clinton, Iowa. It might well be taken for the subject of a temperance lecture, but that is not our object in publishing it. It is to show how a system, run down by drink and disease, may be restored. We cannot do better than quote further from the same:

"For years I was unable to do my work. I could not sleep nights or rest days on account of continuous pains in my stomach and back. I was unable to digest my food. Headaches and painful urination were frequent, and my heart's action became increased. I left my farm and retired to city life, for I was a confirmed invalid, and the doctors said I would never be well again."

"Soon after I happened to use four boxes of Dr. Williams' Pink Pills for Pale People and since then I have been free from all pain, headache and dyspepsia. I eat heartily and have no appetite for strong drink or tea or coffee, and feel twenty years younger."

"My weight has increased 48 pounds. I cannot say too much for Dr. Williams' Pink Pills and claim that they have cured me."

JOHN B. COOK.

Subscribed and sworn to before me this sixteenth day of February, 1897.

A. P. BARKER, Notary Public.
To people run down in health from whatever cause—drink or disease—the above interview will be of interest. The truth of it is undoubted as the statement is sworn to, and we reproduce the oath here. For any further facts concerning this medicine, write to Dr. Williams' Medicine Company, Schenectady, N. Y.

The name and address of the subject of above interview is John B. Cook, of 205 South 5th Street, Lyon, Iowa.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s Scientific Press U. S. and Foreign Patent Agency, the following are worthy of special mention:

PENDULUM ESCAPEMENTS.—F. Baginski, Alenstein, Germany, assignor to Henry H. Keeling, San Francisco, Cal. No. 603,419. Dated May 3, 1898. This invention relates to an escapement mechanism for timepieces and other similar purposes. It consists, essentially, in the combination with an escapement wheel of the oscillatory pendulum carrier having the transverse arm fixed to and movable therewith, a pin carried by said arm is adapted to alternately engage with and disengage from the teeth of the escapement wheel, an independent weighted bell-crank arm or lever fulcrumed with relation to the escapement and pendulum, a segment having a projecting point adapted to engage with and disengage from the teeth of the escapement wheel in alteration with the movement of the first-named point, said point being connected by a link with the bell-crank lever, and is actuated by it.

HAY-COCKING MACHINES.—William H. Frazer, Montpelier, Cal. No. 603,816. Dated May 10, 1898. This invention relates to an apparatus which is especially designed for cocking hay after it has been cut in the field. It consists of an attachment to the mowing machine of a horizontally traveling carrying belt upon which the cut grass is received, an inclined elevating belt running essentially at right angles therewith, by which the hay is carried upward, a basket suspended upon trunnion shaft and in such a manner that the hay will be delivered into it until the basket is filled; a means for revolving the basket when full so as to discharge the hay in a cock or bunch upon the ground, after which the basket is again returned to its normal position to receive another load. The basket has a movable slide, so arranged that the bottom is allowed to swing inwardly about a hinged support, and the weight acts to help discharge the grass from the basket when the latter is inverted.

MICA AXLE GREASE

lightens
the
load—
shortens
the
road.

Makes the wagon pull easier,
helps the team. Saves wear
and expense. Sold
everywhere.

Breeders' Directory.

Six lines or less in this directory at 50c per line per month.

Horses and Cattle.

F. H. BURKE, 626 Market St., S. F. Holsteins, winners for three years of State Fair butter contests. Jerseys and Durhams competing. New Catalogues. Registered Berkshires.

JERSEYS, HOLSTEINS & DURHAMS. Best Butter and Milk Stock. Thoroughbred Hogs and Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER Saxe & Son, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

JERSEYS—The best A. J. C. C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

E. S. DRIVER, Antelope, Cal. Durham Bulls, Jacks and Jennies for sale.

Poultry.

W. H. YOUNG, Stockton, Cal. Incubators, Brooders, Poultry, Pigeon & Dog Supplies. Catalog free.

SANTA TERESA POULTRY FARM, Eden Vale, Cal. Bred Plymouth Rocks, Black Minorcas, White Leghorns, Brown Leghorns. Fine Stock and Eggs for sale. Send for circular.

WILLIAM NILES & CO., Los Angeles, Cal. Nearly all varieties of Poultry, Dairy Cattle and Hogs.

CALIFORNIA POULTRY FARM, Stockton, Cal. Send for illustrated and descriptive catalogue, free.

EXCELSIOR POULTRY YARD, Kingsburg, Cal. Send for circulars describing stock.

WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

MANHATTAN EGG FOOD, Red Ball Brand, at all grocers; or wholesale, Tillman & Bendel, S. F.

Swine.

ELIAS GALLUP, Breeder of Poland China Hogs, Hanford, Kings Co., Cal.

BERKSHIRE AND POLAND-CHINA HOGS, Best Stock; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

J. P. ASHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Swine.

Sheep and Goats.

J. B. HOYT, Bird's Landing, Cal. Importer and Breeder of Shropshire Sheep; also breeds Crossbred Merino and Shropshire Sheep. Rams for sale. Prices to suit the times. Correspondence solicited.

Dogs.

MISS DELLA BEACH, San Jose, Cal. Breeder of Reg'd Thoroughbred Scotch Collie Shepherd Dogs.

RANCHO BENITO KENNELS. Thor'd Scotch Collies. Pups for sale. At stud, Imp. Ormskirk Blucher; fee \$35. Stewart & Son, Aransas, Cal.

The successful growers of

Oranges

have found out that only by the liberal use of fertilizers containing 10% and over of actual

Potash

can they raise large crops of well-flavored, richly-colored fruit.

We have some special circulars and pamphlets on this subject. They are free. Send for them.

GERMAN KALI WORKS,

93 Nassau St., New York.

MEYER, WILSON & CO., San Francisco, Cal. are our agents for the Pacific Coast.

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We keep all the leading varieties. Have 60 breeding yards. Why not improve your stock? Man's of the Improved Pacific Incubator. Absolutely self-regulating, hot water. Send stamp for our catalogue of Incubators, Wire Netting, Blooded Fowls and Poultry Appliances generally. Remember the Best is the Cheapest. PACIFIC INCUBATOR CO., 1317 Castro St., Oakland, Cal.



PETALUMA INCUBATORS

And up—Best Incubator made. More practical progressive features than any other. Indisputable evidence that our system is the correct one. Catalogue free. We Pay Freight. PETALUMA INCUBATOR CO. PETALUMA, CAL.

IMPROVED FRESNO SCRAPER.

5-Foot. Weight, 300 Lbs. NEW STOCK. NEW PRICES. Hooker & Co., 16 and 18 Drumm St., San Francisco.



Cocoanut Oil Cake.

THE BEST FEED FOR STOCK, CHICKENS and PIGS.

For sale in lots to suit by EL DORADO LINSEED OIL WORKS CO. 208 California St., San Francisco, Cal.

LEE D. CRAIG, Notary Public and Commissioner of Deeds, 316 MONTGOMERY STREET, Bet. California and Pine. SAN FRANCISCO, CAL.

"ALAMO" HEREFORD CATTLE FARM,

1½ Miles South of Reno, Nevada.



300 HEAD OF Registered HEREFORDS

Bred from the most noted herds in England and the United States.

Awarded at California State Fair 42 individual, special and sweepstakes in 1896, aggregating in cash premiums \$81.50.

At State Fair held at Sacramento in 1897 received Gold Medal Sweepstakes for herds and every premium given to Hereford cattle.

Stock in all Classes for Herds or Individual Cattle for Sale.

JOHN SPARKS, Proprietor, RENO, NEVADA.

Always in the Lead!

In the face of the strongest competition ever known at a California State Fair our swine herd again carried off the majority of the premiums. Why? Because we have the best pigs in the State. Choice pigs from prize winners ready to ship at reasonable prices. Write for Catalogue and Prices.

SESSIONS & CO., Lynwood Creamery, Dairy and Stock Farm, JAS. R. BOAL, Mgr. P. O. Box 686, Los Angeles, Cal.

A Low Wagon at a Low Price.

The money-making farmer of to-day wants a low built, easily loaded, easily unloaded, light draft, powerful short turn "Handy" farm wagon; a wagon that will save the farmer's own back, save his horses, save his hired labor and save his money.



This wagon is built by the Empire Manufacturing Co., Quincy, Ill. It is only 25 inches high with 4-inch tired wheels, and is sold for the low price of \$19.95. This firm also manufacture Metal Wheels any size, any width of tire, hubs to fit any sized axle. Write for catalogue.

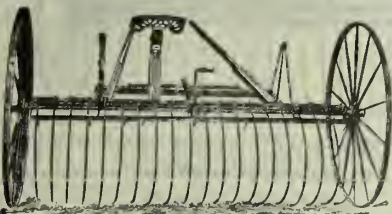
Commercial Paragraph.

THE Zenner-Raymond Disinfectant Co. of Detroit, Mich., publish a useful pamphlet on the use of their preparation, Zenoleum, not only for sheep scab, but for many other animal diseases and injuries, which will be sent free to any address.

Irrigated Farm

FOR SALE. 450 ACRES. FREE WATER, Unlimited Quantity. In the famous Boise Valley, Idaho.

This is a great bargain for any one interested in stock or dairy business. Will produce over 2000 tons alfalfa yearly, at a minimum cost. Excellent cattle range convenient. TATE & STEIN, Boise, Idaho.



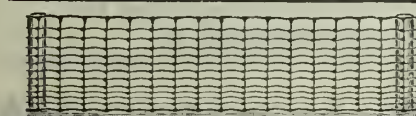
The John Dodds Mfg. Co., one of the largest rake factories in the country, has retired from business and we have on hand a limited number of their rakes which we have been ordered to close out regardless of cost.

We guarantee the rakes as perfect in every respect. We can supply extra parts, having a stock on hand.

HOOKE & CO., 16-18 Drumm St., San Francisco

\$10 A DAY TO AGENTS
MURAT HALSTEAD'S GREAT WAR BOOK.
"Our Country in War." All about armies, navies, coast defenses, Maine Disaster, Cuba, Our War with Spain and relations with Foreign Nations. Nearly 600 pages, written since the Maine Disaster. Magnificent colored illustrations. Agents making \$10 to \$38 per day. No experience necessary. Most liberal terms guaranteed. 20 days' credit, prices low, freight paid. Handsome outfit free. Send 9 two cent stamps to pay postage.
EDUCATIONAL UNION, 324 Dearborn St., CHICAGO.

Steel Wheels
Staggered Oval Spokes.
BUY A SET TO FIT YOUR NEW OR OLD WAGON
CHEAPEST AND BEST
way to get a low wagon. Any size wheel, any width tire. Catal. FREE.
Electric Wheel Co., Box 10, Quincy, Ills



Armed Intervention
is not necessary to the peace of stock or safety of crops about which **Page Fence** is erected.
PAGE WOVEN WIRE FENCE CO., Adrian, Mich.

ROSES!
10 Ever-Blooming, Field-Grown Roses for \$1.
Eight thousand Roses, field-grown, two-year-old plants, have to be closed out. These consist of the best ever-blooming varieties, and will be sold at 10 plants for One Dollar, sent by express or delivered in the city of San Francisco. These Roses are in first-class condition and are bound to give satisfaction. No order filled for less than One Dollar. 1 name a few varieties, as space does not permit of the naming of the whole list: Aurora, Archduchess Marie Immaculate, Bon Seline, Bougere, Beauty of Stapleford, Cath. Mermet, Cheshunt Hybrid, La France, Oceline Forrester, Cameons, Capt. Christy, C. Riza du Parc, Cecil Brunner, Duchess de Brabant, Duchess of Albany, Dr. Pasteur, Etoile de Lyon, Eliza Sauvage, Francisca Kruger, Gen. Dubois, Furstin Blismark, Gen. de Tartar, Jean Ducher, La Marque, Mad. Cochet, Desire, Falcot, Hoste, Lambert, Schwaller, M. v. Houtte, Malmalson, Sunset, Queen, Papa Goutier, Rainbow, and a good many other varieties. F. LUDEMANN, Pacific Nursery Baker and Lombard Sts., San Francisco, Cal.

STEEL PICKET LAWN FENCE,
Field and Hog Fence with or without bottom cable barbed. M. M. S. Poultry Fencing. Lawn and Farm Steel Gates and Posts.
UNION FENCE CO., DeKalb, Ill.

Telegraphy in War.

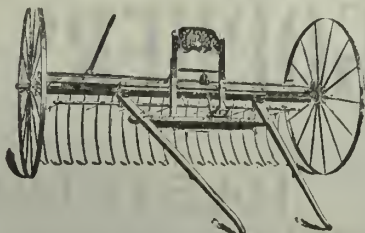
The battle of Manila offers an illustration of the wisdom of having experts in telegraphy and electrical engineering attached to every army or fleet. It ought not to have been necessary to keep the world so long in ignorance of what Commodore Dewey had actually accomplished. If the electrical end of his establishment had been cared for as scrupulously as its strictly fighting end, he could have made his victory even more complete in its moral effect by showing the Spaniards the hopelessness of a war against so ingenious a people as ours. It should be the care of every commander of an army or a fleet to have with him a small corps of men who not only understand the working of the telegraph key and read messages by sound, but are shrewd enough to do a thousand things in the way of repairing and emergency work which may be called for when no outside aid can be procured. These men should understand splicing wire and cable in any condition and amid any surroundings. They should be of trained ingenuity in running down and locating breaks in the connection. They should have enough sobriety of judgment to be able to play the censor if necessary on dispatches put into their hands to send. They should be telegraphic geographers, as well as everything else, having at their fingers' ends the directions and junctions of telegraph lines all over the earth, for it sometimes becomes of the very first importance to send a message to the other side of the enemy's country without actually passing through it.

The use of electricity in warfare has grown very much within the last ten or fifteen years, but the war between Spain and the United States promises to do more to illustrate the possibility of this branch of science than has been dreamed of heretofore. Telegraphy and telephony will both be called into play to do what has formerly been done by wig-wag signals, sending dispatches by courier, etc. Telegraph wire has been reduced so in weight that a man can transport two miles of insulated double conductors as rapidly as a column of cavalry can move. This includes the weight of the reel for paying out the wire, as well as of the wire itself. The flying field telegraph and telephone makes a kit weighing not to exceed thirteen pounds, and this includes a diminutive Morse key and buzzer, so that messages can be sent simultaneously from both instruments.

A YOUNG MARRIED LADY in accompanying her guest to the door remarked: "Oh! how could Bridget have forgotten to sweep the verandah?" Her friend replied: "You have much yet to learn in housekeeping. I should have said, 'Did you ever see the sky so blue?' and you would never have noticed that my porch floor was dusty."

"What did you say was the name of your horse?"
"Nail."
"Nail?"
"Yes, Nail—N-a-i-l."
"What induced you to give the animal such a queer name?"
"Nail is the most appropriate name imaginable. My wife can't drive him."

NEW YORK CHAMPION.



Best Self-Dump Rake.
Most Simple, Most Durable, Easiest Operated. Four sizes—8 ft., 9 ft., 10 ft., 12 ft. Combined Pole and Shafts. All steel if preferred. Agents everywhere. Write for catalogue. W. C. RARIG, Gen. Agt., 310 Townsend St., San Francisco, Cal.

An Elgin watch always has the word "Elgin" on the works. Elgin National Watch Co., Elgin, Ill.

ALPHA "BABY" DE LAVAL CREAM SEPARATORS
OVER 125,000 IN USE.
FIRST—BEST—LATEST.
New and Improved May, 1898, Machines.
Send for new "Baby" catalogue No. 268.
THE DE LAVAL SEPARATOR CO.
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EDWARDS' BUDDING TOOL.

This Patent Budding Tool, at One Stroke, places the bud beneath the bark and leaves it there. The short rounded blade is pushed down till entirely through the bark, then the handle is lowered and the tool glides under the bark carrying the bud, which is held by a grip. The bud is dropped at the right place by pressing with the little finger the key at the end of the handle. The large blade is to cut out buds. As one man does as much as three with common knives, and as a higher percentage of buds grow, the profit is large for every tool used.

OUR PRICES ARE NET CASH, DELIVERED FREE BY MAIL: ONE TOOL, \$2.75; SIX, \$16.20; DOZEN, \$31.80.

EDWARDS BUDDING TOOL CO.,
Sacramento, Cal.

Quinn's Ointment
is a boon to suffering horse flesh and yield of profit to man.
It cures all diseases of the legs and feet, making lame horses sound, thus converting loss into profit.
All Druggists Sell It.
If by chance you should not find it there we'll mail you package for \$1.50. Smaller size 50 cents.
W. B. EDDY & CO.,
WHITEHALL, N.Y.

ZENOLEUM
...A...
Sheep Dip
that will effectually destroy Ticks, Lice, and other parasite pests, and which will cure Scab, Paper Skin, Gangrene, Grub, etc., without discoloring or injuring the fleece and without injury to animal or operator, deserves the attention and patronage of the shepherd.
ZENOLEUM
IS THE ONLY DIP which possesses these qualities and the further advantage of being cheap. One gal. of ZENOLEUM makes 100 gallons of the best dip known to man. Use it either hot or cold. Agent wanted in your locality. Write or our special terms & circulars. Zenner-Raymond Disinfect Co., 58 Atwater St. Detroit, Mich.

CASTLE BROS., Agents, San Francisco, Cal.

WE SELL DIRECT TO THE FARMER.
Steel Landside Double Board Plow, 16-in., \$9.
Sulky Plows, \$25.
Riding Gang Plows, \$35.
3-in. Wagon, \$39.
1000 other articles.
Catalogue free.
HAPGOOD PLOW CO., Box 117, Alton, Ill.

TREE WASH, OLIVE DIP.
"Greenbank" Powdered Caustic Soda and Pure Potash.
T. W. JACKSON & CO.
Sole Agents. No. 226 Market Street, SAN FRANCISCO, CAL.

ASPINWALL POTATO PLANTER.
The Only Successful Machine Planter.
HOOKE & CO.,
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School of Practical, Civil, Mechanical, Electrical and Mining Engineering,
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Open All Year. : A. VAN DER NAILLEN, Pres't.
Assaying of Ores, \$25; Bullion and Chlorination Assay, \$25; Blowpipe Assay, \$10. Full course of assaying, \$50. Established 1884. Send for Circular.

MONEY IN HONEY!
The Weekly American Bee Journal
Tells all about it.
Sample Copy Mailed Free
G. W. YORK & CO.
118 Michigan St., CHICAGO, ILL.

Feeds and Feeding.

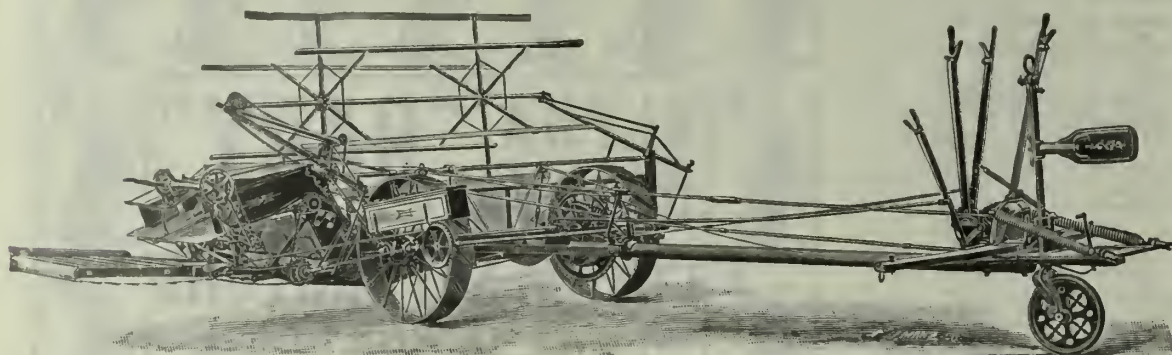
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This is a practical, thorough and complete work based on what has been done: a record of solid facts.
Every Feeder, Breeder or Farmer should have it for every-day reference.

657 PAGES, BOUND IN CLOTH.
Price, \$2 Postpaid.

PACIFIC RURAL PRESS,
330 MARKET ST., SAN FRANCISCO.

Hooker & Co.
16-18 DRUMM ST.
SAN FRANCISCO

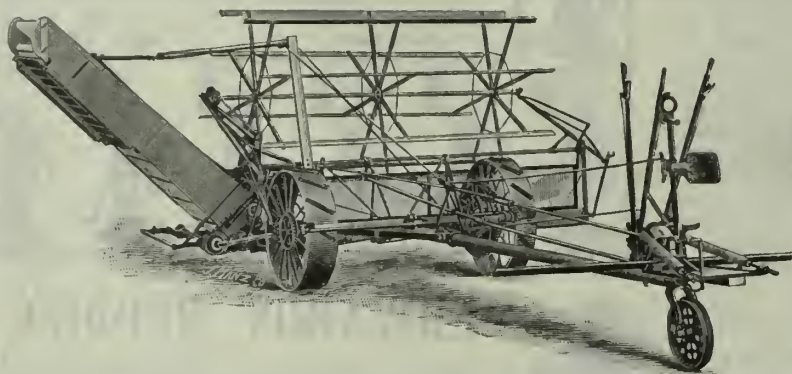


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DID YOU EVER BEFORE HEAR OF A PERFECT BINDER CUTTING A 12-FOOT SWATH?

We guarantee it to cut and bind, to bind all it will cut, just as perfectly as any 7-foot machine ever constructed and the draft will be no greater. Forty acres a day is its capacity. It elevates the grain only 22 inches above the platform. Platform is 42 inches wide. Wheels are 44 inches high and with 12-inch tires. It is double geared. This will revolutionize harvesting. Send for circulars.

Highest
and
Widest
Wheels.



Steel Cutter
BAR.
Steel Ledger
Plates on
Guards.

HARVESTER KING HEADER. 10 or 12-foot Cut.

The latest and most complete Header we put on the market. All steel. 42-inch platform. Double geared. Wheels 44 inches high with 12-inch tires on each. Guaranteed in every respect. Easier draft than any Header on the market. Driver can sit or stand when driving. Reel can be manipulated in any direction. Spout can be removed and binder attachment put on if desired. Send for circulars.

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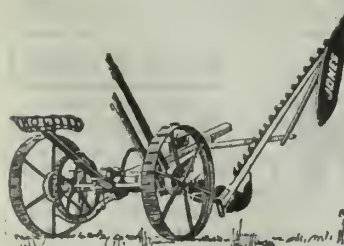
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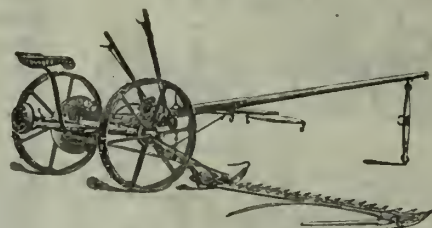
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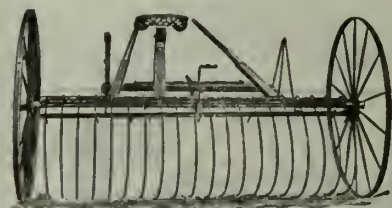
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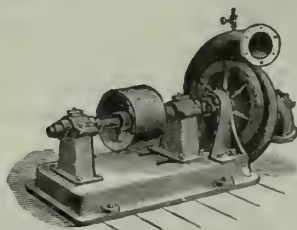
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 23.

SAN FRANCISCO, SATURDAY, JUNE 4, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

Southern California Scenes.

The charming seven is a fitting epithet of the group of counties comprising the region known as southern California. They are charming because of picturesqueness and climatic deliciousness, and in this regard the quality of the region is almost proverbial; but they are charming also to all who enjoy to mingle activity with their dreaming, because they are unrivaled in the State in the enterprise and progressiveness of the people and in the opportunities which their natural resources and adaptations offer for the exercise of energy and acumen in industrial lines. So manifest are these associated charms that during our frequent visits to the south we are always in a quandary as to our own emotions, whether we should more keenly appreciate the country or the people who are exhibiting so much spirit and success in the development of it. Our escape from the perplexity is usually to embrace both in ardent admiration, and to conclude that the people are a match for the country, and both people and country are a glory to the State of California.

Possibly some cool reader may count this rhapsodic, but there is indisputable proof of its general truth in the fact that so many cool and calculating people are concerned in accomplishing the development of the country, and are freely devoting both capital and energy to the accomplishment of the results which attract such wide commendation. Even in this year, which is somewhat upset by scant rainfall and deficient production in some lines, the south is but little perturbed, and its leading promotive organization, the

Los Angeles Chamber of Commerce, has already installed at the Omaha exposition a splendid exhibit, which, if we are rightly informed, is the first if not the only exponent of California interests in evidence at that fair at the present time. This is a piece of energy and activity which the southern counties have always shown when occasion to win friends for the State presented itself.

The views on this page are illustrative of the region to which we allude. It is not any detraction from them to claim that similar scenes can be found elsewhere in California. They are all the more charming in the fact that they are readily and easily realizable and within reach of those of moderate means. The winter blooming roses will embower any habitation whose owner has energy enough to thrust in a cutting and give it even slack summer care and watering. And yet how many bare house walls one still encounters in California! Rose-garlanded cottages have existed as suggestions of beauty and taste ever since early mining years, but some have still to learn the lesson of tasteful home decoration. Let this picture convey one more suggestion of how any town or country cottage may be beautified and adorned.

The lower engraving has especial significance in this year of drouth. While it is true that considerable areas of the State are lacking part of their June field bloom, and some streams will have a shorter, shallower flow, there are thousands of scenes like the one we take from the Toluca district of the San Fernando valley of Los Angeles county. It is not the only district within ten miles of Los Angeles which



CALIFORNIA COTTAGE WINDOW IN
MIDWINTER.



LAGUNA TOLUCA, SAN FERNANDO VALLEY, LOS ANGELES COUNTY, CAL.

can show abundant flowing water gently meandering between flower-clad borders. California is so diverse in natural conditions that one can take choice of vast variety within very short distances, and so in this grand valley of San Fernando, the granary of southern California, one can soon pass from this wealth of moisture to fields which will make scant return this year for the lack of it. These changes and contrasts are sometimes grievous, but they are chiefly so because man has not yet learned to regulate his planning and practice to include the natural factors. Fortunately, as already hinted in our columns, Californians are learning rapidly in this direction, with the result that this year on the whole will be much more prosperous than expected, and in the future we shall be even more prepared to succeed in an art which doth mend nature and thus more clearly demonstrates our ability to profit by the opportunities which lie about us.

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E. J. WICKSON..... Horticultural Editor.

San Francisco, June 4, 1898.

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The Week.

Ninety-nine cars of fresh fruit shipped overland in May is a pretty good figure for a dry year, and the figures are even more significant when it is remembered that it is only seven cars less than in May of last year. And this is only one indication that the year is going to press far more closely to the record of satisfactory production than anyone could have believed possible a few weeks ago. Our weather and crop report in another column shows a most hopeful spirit almost everywhere, engendered by the unusually favorable conditions for late planting.

Decoration Day was observed with unusual interest this year in San Francisco. The camps of 15,000 volunteers assembled here to form the expedition to Manila made large contributions to the parade and other formalities of the day. People assembled in unwonted multitudes and mingled honor for old heroes with cheer and admiration for the new heroes who are eager to emulate their patriotic deeds. There is a most cordial reciprocation of esteem between Californians and their martial guests, and soldiers from many distant States are frank to acknowledge that the regret with which they will pass beyond the reach of California hospitality will be second only to the sorrow with which they departed from their own homes. These experiences are teaching all our people new appreciation of the blessings of citizenship in a country which can command the most profound, patriotic devotion and fervor of so many millions populating so many sovereign States, and still actuated by united spirit in pursuit of noble ends.

The RURAL has held that fruits should sell well this year and the trade is opening in that humor. We hear of canners' contracts for 2½-inch first-class yellow canning clings at \$50 per ton, and other fruits in proportion. This is certainly a good beginning. Most trade at present is in this line. Wheat has become quite weak and unsettled, barley is drooping and other cereals sympathize therewith. Hay is steady at last week's decline, but bran and other mill-feeds are lower. Receipts from beyond the State are excessive. Wool is said to be rather promising, and hides have advanced. The best butter is firmer, and eggs are moving upward. Meats are in good tone and hogs are higher. Beans, potatoes and onions are somewhat affected by reports of larger supplies from later plantings.

Deciduous Fruits in Southern California.

This week's RURAL PRESS contains very interesting and suggestive references to the production of deciduous fruits in southern California. The facts presented in the paper on apples by Mr. Rudisill and on canning fruits by Mr. Welch and Mr. Deupree are not only important for the direct hints which they convey for the employment of horticultural effort, but they suggest considerations about the southern situation in deciduous fruit growing into which we count it important to examine.

We believe it demonstrable that the south has not yet done itself justice in the growth of deciduous fruits. This is but natural in view of the popularity and promise of the citrus fruit interest and other horticultural efforts more distinctively semi-tropical and therefore thought to be in closer harmony with the climatic adaptations. But that such a conception is inadequate and does not do full justice to southern pomological fitness is clearly seen when the triumphs achieved in deciduous lines by certain localities and by certain up-to-date growers are considered. It is, however, the average conception and the average practice which determines the character of the commercial output, and it is this character which shows that the south does not do justice to itself.

The writers to whom we refer, and whose declarations are upon another page of this issue, emphasize the need of closer study of the adaptations of different localities to different deciduous fruits and the choice of varieties of these fruits, not only with reference to their fitness to the soil and climate but their suitability to the different forms of preservation. This matter cannot be too strongly insisted upon and it has not been sufficiently considered by southern propagators and planters. In the central portions of the State canners' points of excellence have been diligently considered for years and large fruit supplies, of uniform style and quality, can be commanded. Extended planting of these acceptable fruits makes canners' operations more secure; more capital has been invested and greater output undertaken. The result to the grower has been ruling prices for canners' selections from 50% to 100% higher than those usually reported from the south. This is a difference which should not exist, but it is not alone conditioned upon choice of varieties.

There is a better general understanding and practice of the art of high-class deciduous fruit production in central than in southern California and this is manifested in several leading directions to which we shall briefly allude.

First, moisture supply. There are some places at the south where this matter is properly adjusted, naturally or otherwise, but there are many more where deciduous fruits have been oversupplied through the attempt to regulate them upon the irrigation schedule which befits the citrus fruits, or where they have suffered severely from drouth, either because the grower determined to grow them on his dry land or because he had an idea that it was never right to irrigate deciduous fruits. The results have been twofold; either the fruit has been excessive in size, thin in juice and deficient in firmness and flavor, or it has been undersized, leathery and insipid. Such extremes are due either to excess or lack of moisture and both are fatal to a high-class product. The adjustment of moisture supply to the characteristic needs of deciduous fruits is as fine a problem in irrigation or cultivation, or both combined, as is found in the application of these agencies to citrus fruits. The south has not given attention enough to these matters.

Second, pruning. Systematic pruning of deciduous fruit trees, each according to its distinctive needs and growers' purposes, is not adequately appreciated by the majority of southern growers. We are aware that many duly regard it, and it is perhaps possible to find as well-shaped trees at the south as elsewhere in the State; but the average is toward the other extreme. There is a ruling belief at the south that the orange tree should be pruned as little as possible, and the conclusion seems to be drawn that the same policy should be adopted with deciduous fruit trees. This is an error of judgment. To secure convenient size and form of tree, to ensure strength, to regulate the ratio of light and

shade, to minister to regular bearing of proper amounts of first-class fruit, there must be thoughtful, systematic pruning.

Third, thinning. In addition to all that can be done by pruning to promote moderation in bearing and uniformly good size of fruit, there must be proper thinning or, as it is sometimes wisely called, "spacing" of the young fruit as soon as it shows firm "setting" on the tree. This is tiresome to do and expensive to pay for, it is true, but it is nevertheless essential to a crop of thoroughly merchantable fruit. It may be said, and perhaps truly, that at the prices paid at the south, one cannot afford to pursue this plan, but the fact remains that unless it is done and a better average product obtained there is little use attempting the product at all. The higher prices obtained at the north are conditioned upon just this sort of work, and if one neglects it he does not get the prices, even though they may be paid in his locality.

Fourth, harvesting. Careful gathering, exact grading, and delivery in just the condition demanded by the different classes of fruit buyers, are matters which have been impressed upon growers in the leading deciduous fruit regions most forcibly. Curing fruits has also demonstrated its exactions and the rewards for high-class work made plainly manifest. It is idle to hope for profitable returns in years of normal production except upon the basis of strictly first-class and acceptable products, and it is not enough for the success of a district that certain individuals attain them. There should be general understanding and response to the requirements of success, and the newer deciduous fruit districts, wherever they may be located, may learn in a season, if they have the will and enterprise, what it has taken the older districts about two decades to learn in the school of experience.

THE STATE Board of Agriculture deserves commendation for the wisdom and energy which they are exhibiting in preparations for this year's State Fair. They are working for more strictly expert judging of exhibits of all kinds and will thus give the fair a higher educational character than usual. We hope this fact will attract exhibitors of all kinds of good things and induce them to attend and give due attention to informing themselves as to what is really the standard of excellence in their several lines of production. Aside from this there are many public reasons why all agricultural organizations and institutions, and individuals as well, should rally to the support of this year's State Fair. We are going through a dry year, and though it is not hurting us generally half as badly as was expected, reports are being diligently circulated by our rival States that California is done for this year and home makers and investors are advised of superior chances elsewhere. Probably there is no better way of demonstrating the falsity of such reports than to put up a State Fair this year which shall surpass the displays of good years. It will be very easy to do this if producers generally will give a little attention to the matter. Save some of your best grain for the State Fair, lay out the best of the immense volume of summer crops of all kinds which will be grown with irrigation, and do not forget the fine things which can be truly labeled "grown in a dry year without irrigation." It will be a surprise to all to see what can be shown in this line. Fill a good part of the pavilion with fruits and vegetables of which we shall have as fine specimens as were ever grown in the State. Fill the cattle sheds and stalls with good animals—there are plenty of them. In short, think about it and act upon it and make the State Fair this year larger and better than ever.

CHICORY GROWING is the subject of a brochure by the Botanist of the U. S. Department of Agriculture. The idea of the writer is that chicory can be profitably grown as an auxiliary crop by farmers, and an interesting account of methods is given. One objection to the publication may be that it does not give sufficient prominence to the chicory industry of this State. Another objection to the crop is the amount of hand weeding which usually has to be done on the moist, rich lands where chicory grows best. However, we find the publication very interesting and may have space later for some facts which will be of importance to RURAL readers.

QUERIES AND REPLIES.

Late Planting of Stock Beets With Irrigation.

TO THE EDITOR:—I am planting mangels on land two miles south of Los Angeles. I cannot wet down all of the land during this month and am in a quandary as to whether I should continue during June. The land is fairly good for stock beets, but has a moderate amount of white alkali. I plant after thoroughly wetting down, and can irrigate once or twice during season.—S. C. D., Los Angeles.

There is no trouble about planting mangels during June when you have moist land. By putting the land in good shape after irrigating you will get a good stand from the seed, and then, by frequent cultivation, you may make the crop without irrigation. The beets may grow right along until they get more moisture from the fall rains. If rains be delayed, you can irrigate. You have a dead open-and-shut proposition. Such frosts as we have in California valleys do not hurt beets. They will grow right along and can be fed all winter right from the field. Our book, "California Vegetables," gives full accounts of growing stock beets, squashes, etc.

Roses and Violets.

TO THE EDITOR:—What is killing my roses? Several have died and others are affected. I find that something has eaten around the stalk under the bark. How can I kill the slugs or snails that are destroying my violets?—A SUBSCRIBER, St. Helena.

Our own roses are freely worked upon by the mining larvæ which work under the bark, but we have never seen them abundant enough to do much harm. A few channels do no injury if the plant is in good condition otherwise. Your plants may be on soil which is not sufficiently underdrained and the roots are rotted by standing water; or they may be on soil too loose and apt to dry out too much for the rose. Either drowning or famishing will destroy a rose, and the remedy is to guard against either extreme. Regular pruning, so as to preserve vigorous new wood and remove old and weak wood and keep the bush from getting too bushy, is also an essential to health and long life of the plant.

You can kill a slug with a sharp rap with a hammer, or you can saponify him by scattering lime around the plants, or you can trap him by using little heaps of wheat bran on chips and then feed the sluggy bran to the chickens. We have found, however, that the best way to protect violets from slugs is to keep the surface of the soil around them frequently stirred so that it will dry on top, while still moist underneath. Old violet beds or borders, with the surrounding ground hard and damp, are almost sure to be invaded. Irrigate in a trench alongside of the plants, and when the ground is dry enough to hoe well hoe thoroughly and let the surface remain loose and dry and you will have few slugs. Then replant your violets frequently. Don't expect the plantations made in '49 to last any longer. New strong plants, fresh and frequently stirred soil—these are cures for many floral ills.

Transplanting Three-Year-Old Fruit Trees.

TO THE EDITOR:—I have some prune and pear trees now three years old that I would like to move if practicable. Will you tell me the best way and the right time? I may mention that it is about 800 feet away from where they now are standing that I wish to remove them.—JOHN MAUNDER, Calistoga.

The time for this work is after the leaves have fallen and the ground has been deeply moistened by the early rains. These conditions usually occur in this part of the State in December. The way to transplant is to dig up the trees carefully so as to save a good part of the roots; cut smoothly all severed ends and cut out all bruised bark with a smooth cut. Plant out in a hole sufficiently large to accommodate the roots and pack the surface soil snugly around all the roots. Fill the hole sufficiently to cover the roots and then tramp well with the feet. Fill the hole with the bottom soil and leave it loose on top. Cut back the tops of the trees so as to leave about one-third of the original size, symmetrically balanced around the stem. Wrap or whitewash the stem and main branches so as to guard against sunburn. This is the process, but it is of doubtful utility to move old, well-established trees. If the trees have stood three years in the present place and have secured the spread common to such trees in California, it will usually be better to plant good thrifty yearling trees where they are wanted than to trans-

plant three-year-olds, because the younger trees will overtake and surpass the older in growth and bearing. However, transplanting three-year-olds does better with plums and pears than with peach and apricot, and if our correspondent wishes to try it we have shown him the way to do it.

Home-Grown Strawberries.

TO THE EDITOR:—How shall I raise strawberries? I am told they will do well almost anywhere in California, but I have been trying for some years to raise them, with very poor success, on good soil. The plants make no growth and the berries are small and imperfect. I do not know the variety.—SUBSCRIBER, St. Helena.

There have been from time to time many good articles in the RURAL on strawberry growing, all of which can be read with profit. Probably our correspondent has a worthless variety; otherwise he could hardly fail to get good growth of the plant at some time of the year. Unsatisfactory fruiting at any time in the year is the fault of the variety, either in general habit or in lack of either pistillate or staminate elements in the bloom. Failure of spring-bearing plants to grow and bear through the summer is due to lack of irrigation and cultivation. Dig up and throw away the plants you have. Get a few dozen Sharpless, Monarch of the West and Longworth varieties and plant this fall on well prepared, rich soil; keep them well cultivated and irrigated if fall rains should be scant or deferred. These plants will bear freely in the spring, and after that irrigate freely and cultivate well through the summer, and you will get a succession of fruit. We have named the above varieties because they are hardy and prolific in this part of the State. There are other varieties preferred for various reasons by commercial growers in different parts of the State, and they have been frequently mentioned in the RURAL.

Johnson Grass.

TO THE EDITOR:—I am sorry the blades of grass I sent were not sufficient. I now forward the roots as well. I believe it is Johnson grass, but I cannot get it out of the orchard, and it keeps spreading.—SUBSCRIBER, Guinda.

The specimen is Johnson grass, and your experience with it is like that of others who are afflicted with its presence. There is no perfectly satisfactory treatment. On loose, deep and moist soils it is well nigh ineradicable. We know of cases where more than the value of the land has been expended in grubbing, etc., and the grass held on. In such places, we know nothing better to do than to plow, rake out as many roots as possible and seed down to alfalfa. Alfalfa and Johnson grass make good feed for stock. On uplands the growth of Johnson grass is less vigorous, and it can be kept down and sometimes extirpated. Plow in midsummer or fall before the rains as deeply as possible, and let the furrows lie on edge and dry out as much as possible. Harrow and rake out the roots as cleanly as possible and burn them. Be ready then to use a sharp weed-cutter, which will cut all the roots below the ground, and keep cutting and recutting, with the idea of never letting a sprout reach the surface to get a green color. To do this it will not answer to let the grass grow above the surface and then cut it with the cultivator. This only helps to spread it. Johnson grass has been practically destroyed by this method of treatment and by no other, so far as our knowledge goes.

Cutting to Kill Willows.

TO THE EDITOR:—Can willows be killed by cutting off at any particular season of the year? If so, when is the proper time?—J. W. VIOLETT, Ione.

With reference to cutting to kill willows and other deciduous trees and shrubs, there is agreement among experienced land clearers that they should be cut at that time in the summer when they have just finished their greatest growth and before the "return flow" of the sap takes place. This leaves the root in its weakest condition and it will often die without attempting to sprout at all. The precise date at which the trees should be cut varies with different localities. In the interior the growth is finished earlier than on the coast, and there is some variation in the same locality in different years, owing to the character of the season. It comes a little later in cool, moist summers than in hot, dry ones. As soon as the buds are formed in the axils of the leaves of the new growth the cutting should be done quickly. The condition is reached in the interior in July; on the coast it may be the last of July or the first part of August.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 30, 1898.

By W. H. HAMMON, Station Director.

On the 28th showers fell throughout the State. The rainfall for the week, except in the Sacramento valley, was below the normal. The week was generally cold and cloudy, and on the whole very favorable for vegetation. The ditches in irrigated sections are reported to be running full. The rains have proven of even greater benefit than anticipated. Barley sown on bean land has come up well, and farmers will have crops where only hay was expected. All grains were improved, and hay was not hurt to any great extent. Fruits are doing finely. First crop of strawberries already marketed, and others not hurt by rain. Cherries are being shipped daily. Orange trees are doing well, and olives, while not setting as well as might be expected, will still make a good yield. Grapes are doing nicely. Some orchardists are busy thinning peaches. Vegetables are prime. Planting beans and sugar beets. Hops in good condition. Second crop of alfalfa ready to cut.

SHASTA.—Haying in full blast. Rain damaged hay slightly. BUTTE.—Favorable for growing grain, and many acres intended only for hay will now give a fair yield of plump grain. Orange trees are doing well and still retain a good setting. Olives not setting as well as expected. River about stationary.

GLENN.—Haying about over. Harvesting barley will commence soon. Wheat crop far better than expected.

YUBA.—Crop prospects changed, and now fairly abundant yield of grain, hops and fruit expected. Canning and drying peaches will be short.

SUTTER.—Favorable for growing crops. Haying nearly over; most of hay in field. Little damage.

YOLO.—Cool weather with light rains beneficial. Haying still on; crop better than expected. Grain crop light.

SACRAMENTO.—Sufficient rain for irrigating purposes. Steady rain without wind very beneficial. It did not damage the hay crop and came too late to injure strawberries.

SOLANO.—Rain of Friday will improve all grains and did not hurt hay to any extent; helped the quality of fruit. Shipping Royal Ann cherries. Good yield of vegetables expected. Summer-fallow will make fifteen sacks per acre; very little winter sown will pay for harvesting.

PLACER.—Rain and cool weather have assured a full crop of grain and late hay; some damage to cut hay. Thinning peaches. Grapes and garden truck doing well.

SAN JOAQUIN.—Excellent weather for growing grain. In many places will have wheat; considered a failure one month ago. Strawberries about over. Onion shipments heavy.

STANISLAUS.—Crops still doing well below canal limits. First crop of hay secured; no damage by rain. Grapes promise good yield.

MERCED.—Haying progressing slowly on account of cool weather. Grain maturing fast, and what there is will be of good quality.

FRESNO.—Grapes doing nicely; no damage from thrips, and crop promises to be large. Pear crop will also be fine. Peaches small crop, but good quality. Cutting alfalfa and wheat hay. Weather favorable for growing grain. Wheat and barley a failure on dry lands, but on irrigated lands there will be some grain.

KINGS.—Loss of fruit almost total, except Bartlett pears, which will be about one-fourth of a crop. Planting corn and pumpkins extensively on land where other crops failed. Ditches full of water. Vineyards promise large yield.

TULARE.—Shipping hay and much hay cut. Grapes setting well. Some water in ditches, but not enough to do much good.

KERN.—Cool weather helps grain to fill. Second crop of alfalfa ready to cut. Grain hay being harvested.

LAKE.—Many farmers hauled in their hay while wet, fearing a heavy rain. Vines and fruit trees are looking fine.

SONOMA.—All crops looking well. Hops making fine growth. Cherries ripening fast. Large crop of prunes.

NAPA.—Cherries injured by rain. Good hay and fruit crops; more hay than local demand. Pasture for local use only.

ALAMEDA.—Continued damp, cool weather beneficial to crops, fruit, vines and beets.

SANTA CLARA.—Large crop of cherries. Haying continues; light crop. Beets and vegetables doing well.

SAN MATEO.—Picking cherries. Fruit of all kinds small in size. Enough hay for home use and some grain.

SANTA CRUZ.—Good average crop of hay and grain.

MONTEREY.—Favorable weather for crops. Considerable hay and a little fruit will be grown. Beet fields looking well.

SAN LUIS OBISPO.—Bean planting in progress. Fruit doing well. Cattle are being shipped to pasture.

SANTA BARBARA.—Early or first setting apricots will be a fair crop, but second setting probably small. Walnuts set heavy, but yield will depend on weather; lemons fair. No bean planting.

VENTURA.—Rain was of greater benefit than at first anticipated. Barley sown on bean land has come out wonderfully and will make grain where a short time ago farmers expected only hay. More hay than anticipated. Apricots of good size.

LOS ANGELES.—All fruits doing finely except almonds and prunes. Big crop of apricots and peaches. Deciduous fruits and hay better than expected. Corn looks well. New crop of oranges looking well, especially Navels, which promise big yield.

SAN BERNARDINO.—Continued cool weather helping grain and fruit. Peaches better than expected.

ORANGE.—Orange crop very promising. Good crop of peaches and apricots. More hay than expected. Some grain.

RIVERSIDE.—Enough hay and feed to carry stock through. Some grain being cut in back country, but yield is of little consequence.

SAN DIEGO.—Cooler and partly cloudy. All fruit growing well. Peaches where not thinned dropping some. Apricots better than expected; fruit large.

EUREKA SUMMARY.—Weather favorable. Soil generally in fine condition. Crops making rapid growth; small fruits especially will be abundant. In some localities hay crop promises to be unusually heavy.

LOS ANGELES SUMMARY.—Effect of cool weather fully appreciable on orchards and growing crops; trees leafing; grain fields supposed to be dead are turning green, but not likely to make hay.

The following data for the week ending 5 A. M., Wednesday, June 1, 1898, are from official sources.

And are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week... | Total Seasonal Rainfall to Date... | Total Seasonal Rainfall Last Year to Same Date... | Average Seasonal Rainfall to Date... | Minimum Temperature for the Week... | Maximum Temperature for the Week... |
|----------------------|--------------------------------|------------------------------------|---|--------------------------------------|-------------------------------------|-------------------------------------|
| Eureka..... | 1.16 | 33.95 | 49.48 | .02 | 42 | 60 |
| Red Bluff..... | .28 | 14.56 | 24.21 | T | 44 | 86 |
| Sacramento..... | .34 | 10.49 | 17.28 | T | 46 | 76 |
| San Francisco..... | .24 | 9.36 | 23.21 | T | 48 | 61 |
| Fresno..... | .01 | 4.80 | 10.52 | T | 48 | 94 |
| San Luis Obispo..... | .02 | 7.16 | 20.75 | T | 40 | 72 |
| Los Angeles..... | T | 6.83 | 16.86 | T | 50 | 78 |
| San Diego..... | .02 | 4.80 | 11.78 | T | 54 | 66 |
| Yuma..... | .00 | 1.66 | 5.35 | .02 | 58 | 98 |

* No record.

HORTICULTURE.

Notes on Canning Peaches.

TO THE EDITOR:—Can you give some information about the Philips Cling peach? It is most important here that the fruit tree should not be liable to curl leaf (as the McCowan Cling suffers very much here). I hear that the Philips is very much liked by canners, and that is about the extent of my knowledge. It is not in the peach tables on pages 311-312 in your very valuable book, "California Fruits."

In planting about 500 cling peaches would you advise the use of two varieties, methodically mixed (say two rows and two rows), and can you suggest the second variety of cling for this valley? I have found the Hardy Yellow Tuscan a glorious grower—a glorious peach, selling easily and with no symptom of curl, but it is not propagated. If I had been able to see ahead I would have raised my own stock, but I cannot afford to wait longer; and the peach moth and cutworms make the work of budding seedling trees in orchard form not very satisfactory. The McKevitt Cling (white) does not prove very satisfactory in the long run, does not bear very well. I have heard the Nichols Orange Cling well spoken of. Would it curl here? E. EADEN COOK.

Napa.

Philips' Cling is probably the most popular canning peach in this State at this time. It originated in Sutter county and first came into notice through its popularity with the canners at that point. It is a very handsome yellow cling, good size, fine globular form, rich color, fine flesh and flavor—in fact, it seems to be almost an ideal peach for canning purposes.

We have no record of its resistance to curl leaf; but that does not cut much figure in the calculations of the Sutter county growers, but they find that peach trees sprayed with lime, salt and sulphur for scale insects are almost free from curl leaf, this wash acting both as a fungicide and an insecticide. This immunity from curl leaf, through the use of this wash, unfortunately does not occur in all regions and nearer the coast, where the leaf curl is worse than in Sutter county; still it is possible to overcome the curl leaf by the use of the Bordeaux mixture, as already described in our columns.

Philips' Cling peach is not mentioned in the first edition of "California Fruits," which is evidently the one you have; but it is illustrated and described in the second edition, which was issued about two years later.

It does not appear to be necessary to plant peaches so as to arrange for cross pollination; there are thousands of cases in which solid blocks of the same variety have borne satisfactorily. It might be a desirable recourse in the case of bearers which are somewhat shy; but in the case of those ordinarily grown it does not seem to be necessary.

Since you have found the Hardy Yellow Tuscan so good a peach, why not continue with that variety? It would be quite easy for you to make an arrangement with a local nurseryman by which he might bud for you whatever number of trees you might desire, taking the buds from your own trees. In this way, either by using June buds or dormant buds, it would be possible to make your plantation this fall or winter. Of course, June buds and dormant buds have to be treated a little more carefully than yearling trees; but they are quite largely used when one is in a hurry to get ground set with a certain variety.

Nichols' Orange Cling is an improved orange cling and a very satisfactory peach. It is practically free from curl leaf in the lower part of Alameda county, where it originated, and we presume it would be so with you.

Seller's Golden Cling is another yellow cling, an improvement on the Orange Cling, which is now coming into great favor each year as a canning peach. It is a vigorous grower and practically free from curl leaf.

Cross Pollination of Apples.

If you have any doubt, says the Watsonville *Pajaronian*, about the value of cross-fertilization by mixing varieties of apple trees in your orchard, interview A. N. Judd. He can show you, by an examination of his orchard, that there is a strong foundation for the claims of Eastern orchardists and many California fruit growers, that orchards of one variety of fruit will not bear as heavily and as profitably as orchards where varieties are mixed. Mr. Judd says he can show rows of apple trees of

different varieties, in close contact, which are loaded with apples, while the trees which are more distant—where they are all of the same variety—have not as much fruit. His orchard made a like showing last year. A similar showing was made in Green Valley, where orchards are given over to apples, peaches, prunes and apricots. The orchardist with all his acres given over to one variety of apples may save years of waiting and a small fortune by giving this subject of cross-fertilization the closest study.

California Apple Growing.

By J. H. RUDISILL at the Los Angeles Fruit Growers' Convention.

Residents of southern California have given the apple only a secondary place, and the fruit has until very recently been considered unsuited to this locality, and therefore not worth planting to any extent. Many circumstances, however, are rapidly changing the views of fruit growers here in regard to our ability to grow the apple with success and profit. There is increased interest in the subject, and an appreciation of the advantages to be derived from its more extended cultivation.

Good Apples Grown in California.—The fruit growers of Oregon, northern and central California, where the conditions are more favorable, have long since proven that the orchards of the Pacific coast can produce apples equal to, if not superior to, those from any portion of the globe, as has been shown by their triumphs at the World's and district fairs, and by their large shipments of fruit to Europe, Australia and other foreign lands.

Yet it is a noteworthy fact that while southern California has been for years producing a large surplus for export of other fruits, except those strictly tropical, she has always been a large importer of the apple and its products for home use; which experience now shows might easily have been produced within her borders.

To such an extent has this deficiency grown that a moderate estimate of the amount required to supply it, for the past season alone, is over 2000 tons; and this, too, in the face of retail prices to the consumer ranging from \$1.25 to \$1.50 per bushel; prices, by the way, that tend to check the liberal use of the fruit and to give the apple growers of the East the impression that their brethren engaged in the business here have a veritable Klondike.

Southern California Should Grow Apples.—The rapid increase of our population, which is principally from Northern and Eastern States, where the apple is a staple commodity and regarded by all as a prime necessity to fair living, has no doubt tended largely to produce this condition of our market; but the generally diffused impression among older residents that the soil was not adapted to its cultivation by reason of its semi-tropical character, is, I think, mainly responsible for it, as this prevalent idea tended to discourage the general planting of apple orchards.

We have, however, to thank a few intelligent and persistent fruit growers that these views are being rapidly dispelled and the fact demonstrated that with a judicious selection of soils, locations and varieties adapted to these, as fine apples in quality and appearance can be grown in southern California as in any other country.

Importance of the Apple.—By far the most important branch of fruit growing in the United States is the apple industry. In the number of bearing trees, and the amount and value of their products, it is nearly double that of all other deciduous, tropical and semi-tropical fruits combined.

The report of the United States census for 1890 states that there was at that time over 130,000,000 bearing apple trees in the country, and these produced over 143,000,000 bushels of apples. These, at the moderate price of 50 cents per bushel, represent an income of \$71,000,000.

California Figures.—California, though a laggard in this industry, is now steadily increasing the number and area of her apple orchards, for, according to the report already referred to, she had in 1890 a little over 1,200,000 bearing trees, while the statement of the county assessors for 1897 gave the number then at a little over 2,000,000 trees, a very gratifying increase in less than a decade, but a total that is in striking contrast with two leading apple growing States in the Union, viz., Michigan and Ohio, which with only three-fifths the area of California had jointly in 1890 over 26,000,000 bearing apple trees.

The seven counties comprising southern California have about one-third the area of the State, but had only one-tenth the number of bearing trees in 1890. They still bear the same relative position, as they are credited with something over 220,000 trees for 1897.

Apples All the Year.—There is no fruit more universally liked or more generally used than the apple, and, in addition to its health giving qualities, there is none more valuable for planting for commercial purposes, on account of its long market season, and for its so-called secondary products.

By reason of the peculiar topography which gives

to many portions of California the entire range of climate on the Atlantic coast from Maine to Florida, also gives us the advantage of having the apple as a dessert fruit every month of the year.

Usefulness of the Apple.—Everything about the apple can be utilized. If not used as dessert fruit, it can be cooked in many attractive and palatable forms, dried or made into beverages, butters, jellies, or finally used as feed for stock, especially the sweet apple, which is said to be excellent for fattening purposes. Even the cores and peelings, according to a recent circular from a United States Consul, are now wanted for shipment to Europe, to be used for various purposes.

In fact there is no other product of the farm that so thoroughly fills the old German farmer's idea of a money-maker. When asked how it was that he had risen from poverty to comparative wealth in such a short time, he replied "that he had worked hard, and produced many things on the farm, which he took to market to sell; what he could not sell he brought back and fed to his pigs, and what his pigs could not eat he himself ate."

Growing Popularity of the Apple.—There is a very general revival of interest throughout the fruit growing sections of the world where apple culture is possible in this industry, and much attention is being given to the introduction and testing of new varieties and to more thorough methods of cultivation. Extensive plantings are made in localities where in former years it was thought the apple could not be grown, for with improved means of transportation and of keeping, it can be sent in good shape to all attractive markets of the globe. Even in old England large plantations are being made for commercial purposes, mainly to supply the increasing demand of the English market. Rivers & Son, the eminent horticulturists of that country, are authority for the statement that orchards planted in apples upon land properly cleared, drained, trenched and fenced against game and stock, will pay a fair profit upon the capital invested and labor required to produce a crop, and will increase in profitable income for a number of years. There is no fruit tree that responds so faithfully and promptly to systematic and intelligent treatment. As an instance, one of the bad effects of neglect is the habit acquired by nearly all orchards of bearing an excessive crop one year and nothing, or next to nothing, the following year. Mr. Pell, at one time the famous grower of the Newtown Pippin at Pellham, N. Y., more than thirty years ago, showed to the fruit growers of the country that by judicious but persistent thinning of the fruit each year and the use of fertilizers, it was possible to break up this habit of overbearing, and in his orchard of 2000 trees he succeeded in making them abandon the off-year system and give him annually uniform crops of magnificent fruit.

Varieties for Different Localities.—What is needed in southern California, and in fact in different portions of the State, is to more fully recognize the peculiarities of our climate, and that we have three zones in which the apple can be grown, viz., the coast region, the interior valleys and lower foothills, and the upper foothills, mountain valleys and plateaus up to 3500 or 4000 feet.

These all require a careful selection of varieties and different treatment of the trees, especially in locations where irrigation is necessary.

The custom of planting the apple among citrus trees or of growing any crop that requires winter irrigation or cultivation should be discontinued.

Suggestions.—Our Pomological Society should take the initiative and secure from fruit growers in the zones I have named the results of their experience as the varieties best adapted to their respective localities and their best methods of cultivation. They should also encourage the introduction and trial of new varieties of the apple by premiums for best displays of these by their annual meetings. With the information so gained the intending planter can proceed with his work with more certainty and better prospects of success, and will not have to wait several years for the results of his own experiments. Our experiment stations are doing something in this direction, but owing to the peculiarities of climate already referred to, the results obtained will only be beneficial in a general way. The experience of the station at Pomona in apple culture might not be of any more benefit to the Antelope valley or the Julian district than would that of Florida be to the growers in Maine, but would be beneficial to all localities similarly situated to Pomona.

The Outlook.—There is certainly a fair outlook for the growers of apples in southern California, and there should be a sufficient incentive to increased planting in the matter of merely supplying our home market with first-class fruit at reasonable prices. If all signs do not fail, the increase of our population will unquestionably keep ahead of the present rate of planting.

The future of British Columbia and Alaska can only be conjectured, but there must in the nature of things be a great market for the apple and its products in that region at once. Western Siberia, under the control of Russia, is also rapidly increasing its population, and owing to the rigors of that climate they must of necessity be consumers and not pro-

ducers of fruit, and there are others on the shores of the Pacific, which it is not necessary to take time in specifying.

No one, however, should engage in the work of planting an apple orchard for commercial purposes unless he is prepared to give thorough, intelligent labor, not alone in the soil and all the details of planting, pruning and cultivating, but also in the battle with insect pests and the subsequent gathering, packing and shipping to market. He can rest assured that if he succeeds in raising the best fruit he will always find a market for it. For it is an indisputable fact that there is not enough of the best of any commodity, and that there is always a demand for it.

Dead Shot for Rodents and Birds.

TO THE EDITOR:—As there is little or no vegetation on many fields and foothills, squirrels and linnets naturally seek the nearest green orchard, and, alas, for the foliage, and, later, the ripening fruit, etc. I have within the past ten days had good success in using oranges cut into quarters, with a little strychnine (about $\frac{1}{4}$ grain) spread over the flesh. Using one piece to each squirrel hole has swept away hundreds of the rodents, also rabbits. By cutting the oranges in halves and using the same kind of poison and impaling the half orange on a small twig at the highest point obtainable on an apricot tree, I have destroyed linnets by the hundreds all over the orchard. I used one piece to about one acre of orchard for the birds, but I took a little caution in placing these on the trees by peeling the bark off the little twigs for 8 or 10 inches. It is better still if there happens to be a dead twig on the tree, so as to leave the tree perfectly safe. While the amount of poison is too small to do any damage to a tree, yet, as a matter of precaution, I chose to do so.

C. W. ROTH, Gopherman of the Piru Ranch.
Piru City, Ventura Co.

FRUIT PRESERVATION.

Crystallizing Fruit.

TO THE EDITOR:—Have you any publication on how to glaze, candy or preserve fruits, especially figs, and how to make fruit syrup? I would like to find out how to make what is called California glazed fruit, what vessels and material are used.

Spenceville, Nevada Co.

J. H. EICKHOFF JR.

We do not know of any satisfactory publication covering the details of such manufacturing. There is very much that can only be learned by experience and constitutes the trade secrets of manufacturers. The general theory, and an outline of practice, was recently given by J. J. Pratt of the Yuba City Cannery as follows:

The theory is to extract the juice from the fruit and replace it with sugar syrup, which, upon hardening, preserves the fruit from decay, and at the same time retains the natural shape of the fruit. All kinds of fruit are capable of being preserved under this process. Though the method is very simple, there is a certain skill required that is acquired only by practice. Several successive steps in the process are as follows:

First, the same care in selecting and grading the fruit should be taken as for canning; that is, the fruit should be all of one size, and as near the same ripeness as possible. The exact degree of ripeness is of great importance, which is at that stage when fruit is best for canning. Peaches, pears, etc., are pared and cut in halves, as for canning; plums, cherries, etc., are pitted. The fruit, having thus been carefully prepared, is put in a basket, or a bucket with a perforated bottom, and immersed in boiling water. The object of this is to dilute and extract the juice of the fruit. The length of time the fruit is immersed is the most important part of the process. If left too long, it is overcooked and becomes soft; if not immersed long enough, the juice is not sufficiently extracted, which prevents a perfect absorption of the sugar.

After the fruit has been thus scalded and allowed to cool it can be assorted as to softness. The next step is the syrup, which is made of white sugar and water. The softer the fruit the heavier the syrup required. Ordinarily about seventy degrees, Ballings saccharometer, is about the proper weight for the syrup.

The fruit is then placed in earthen pans and covered with the syrup, where it is left to remain about a week. The sugar enters the fruit and displaces what juice remained after the scalding process.

The fruit now requires careful watching, as fermentation will soon take place, and when this has reached a certain stage the fruit and syrup are heated to a boiling degree, which checks the fermentation. The heating process should be repeated as often as necessary for about six weeks.

The fruit is then taken out of the syrup and washed in clean water, and it is then ready to be either glazed or crystallized, as the operator may wish. If glazed, the fruit is dipped in thick sugar syrup, and left to harden quickly in open air. If it is to be crystallized, dip in the same kind of syrup, but is

made to cool and harden slowly, thus causing the sugar which covers the fruit to crystallize. The fruit is now ready for shipping. Fruit thus prepared will keep in any climate and stand transportation.

What a Grower Thinks About Canning.

By J. W. DEUPREE of Toluca at the Los Angeles Convention.

The fruit grower and canner are never so near to each other in peace and harmony as after the harvest is over, the pack made and sufficient time elapsed to enable them to smooth out a few of the ruffles in their tempers, occasioned by the many vexatious happenings of the season.

This period of extreme amity unfortunately does not last beyond the spring bloomtime. With bud and blossom begins the sparring between grower and canner, each playing for position, and the canner usually gets it, too, unless Jack Frost intervenes and clears the field, as sometimes happens, in which case hostilities cease, and the canner sympathizes with the grower and tells him what good things he had intended to do for his locality this season if it hadn't been for the frost.

Drying and Canning.—No fruit grower in this part of the State can afford to raise fruit for drying exclusively. He must then grow it for canning purposes, and that he does so is evidenced by the annual scramble to get in on the ground floor with the canners.

The low price paid for fruit by canners has discouraged most growers, and many of them are unwittingly adding to their misfortunes by negligence in not raising such fruits as the canners will buy, even at these low prices, for it cannot be denied that the canners' prices, low as they have been, are better, or at least as good, as the same fruit would have brought if dried.

Changing Fashions.—I am well aware that the grower is badly handicapped in his efforts by the constantly changing demands of the trade. Five years ago canners were advising growers to set such peaches as Globe and Susquehanna. Now these are in bearing and the canners want Clings, and the grower doesn't find it just quite convenient to grow Clings on a freestone tree!

To sell to the cannery means cash on delivery. To dry means a laborious and expensive harvest, and, in this locality, dark and unsatisfactory fruit, starvation prices and a bank account in red ink.

The Lion's Share.—That canners pay more for fruit than it is worth to dry is no great consolation, for there is a deep-seated conviction among growers that the canners take the lion's share. With apparent sincerity they assure us they only make small interest invested, no profits and frequent losses. The growers know their side of the question, and, if they can bring themselves to assume the canner is playing in the same kind of luck, they ought to fall on each others' necks and do the weep act and pray for deliverance. The great quantity of fruit grown has made canners exceedingly choicer in their purchases, and the wise grower will lose no time in falling into line with an earnest effort to raise only the choicest fruit with which to supply the demand. Such men will supply the canneries, and the careless and indolent will sell to the driers. Of course, even with the greatest care, one will have some fruit which will have to go to the drier, but this should be reduced to the minimum.

Canners' Policies.—From about this time on to harvest, the canner gives out that he only intends to make a small pack. This statement has the desired effect in one way, causing the growers to think they have a small market for a large crop, so they rush to the canner, almost begging him to take their crop, each grower trying to get in ahead of his neighbor. The canner meets him with a contented feeling, but a worried look, much talk that means little, but nary a word of comfort, and the grower is thus kept on the anxious seat until the crop is ready for harvest, and by this time growers, having lost all independence, the canner takes such fruit as he wants at his own price. But he often takes much that he doesn't want, and why? Because his policy has been to discourage and make it possible to buy cheaply, and this discouraging process has made small fruit for want of thinning. It is almost impossible for pickers to keep up to the standard desired when a large percentage of the fruit runs small and below grade. This makes expensive picking, as well as an all-round, unsatisfactory deal.

Southern Quandaries.—The canner always complains about so much small fruit. I think a change of policy on his part would correct the evil. But do the canners of southern California really want this objection removed? Doesn't it furnish them with a good and sufficient excuse for paying only one-half as much for their fruit as their northern competitors pay? It has never been hinted that the pack of our canneries is in any way inferior to that of their northern brethren or that they fail to sell in the open market at as good prices. It seems to me that the canner and grower should strike on some common ground to work on.

If the canner intends to make a big pack, let him

say so and make early purchases so the growers can know what to depend upon. Then they will get in and thin the fruit intelligently. Otherwise they will not, as it is an open question with many as to whether it pays to thin for drying beyond the point to save the tree from breaking.

Many growers complain there is loss in picking so hard as they have to do for the cannery. The difference, in my opinion, is that the picking for drying is done in a slipshod way and more care in this department would be amply repaid.

Prepare to Dry.—Much as I dislike drying fruit, I am almost persuaded to the belief that the grower who is not prepared to dry his own fruit is a menace to the industry. He is the man who is wholly dependent upon the canner, chases him around from January to July importuning him to buy his fruit; and the canner, being human, takes advantage of the situation and at the same time sets the price for the season's purchases far below what it would be were the growers all associated together and would keep their nerve and let the buyer do some of the sweating.

I do not advocate an association for the purpose of setting prices beyond a fair profit to the grower, always keeping in mind the business conditions of the country and at the same time allowing canners a fair profit commensurate with the volume of business done and the risk taken.

Better Relations Between Canners and Growers.—To my mind, there must be a better and more business-like understanding between grower and canner or co-operative canneries will be the rule instead of the exception. Indeed, I am inclined to the belief that this will be the result. If co-operative canneries can be successfully operated, the grower can save the profit that now goes to the commercial canneries.

In short, if you depend on some one else to do your manufacturing for you, you must content yourself with what he is willing to pay you for your unfinished product, and to say he will buy as cheaply as he can and sell as dear is but to state the most common element of human character. Business and selfishness are bosom companions and have no use for sentiment. Business strips one of his earnings and selfishness steps in and strangles sentiment and it will be ever so until human nature changes—until man evolves out of selfishness and into the spirit of universal brotherhood. When that time will come, no man knoweth.

What a Canner Thinks About Fruit Growing.

By J. WELCH of Los Angeles at the Fruit Growers' Convention.

To the subject, "the advantage of canneries," I might add to the title of this paper, "how best to secure them," for it is an evident fact that any institution that will purchase a large quantity of the green fruit that is grown must be a benefit to the grower.

Poor Varieties.—To secure the greatest benefits and the best results we must start right, and to do so we must have the nurseryman who grows the trees do his work right. In the past, I am sorry to say, there have been many mistakes made, and many of them so glaring that the line between the "mistake" and fraud has been a very narrow one.

Some twelve or fourteen years ago there were a few trees of the genuine Lemon Cling shipped here from the North, and they met with favor with the canner and his trade, and what was the result? In less than two years every nurseryman in the country had Lemon Clings to sell. Large plantings were made, but when the fruit was brought to the cannery but one tree in ten proved to be Lemon Cling. We have hundreds of acres of so-called Lemon Clings that are worthless, in fact not worth picking and hauling. What do they do? Why they crowd in and help pull down the price of good fruit.

I could enumerate other such cases—so-called Orange Clings, Tuscan, etc., which are clings budded from seedlings and are not what the canner or jobbing trade wants. In freestone peaches the same careless way has been practiced, until the actions of some nurserymen border very closely on criminality.

What to Plant and How to Plant.—A grower, when he decides on planting a deciduous fruit orchard, communicates with those to whom he expects to sell his fruit. They will tell him what they want and how they want it. By all means avoid planting a mixed lot, but plant a block.

Choose that fruit the land is adapted to; if apricots, plant apricots; if peaches, plant peaches.

Two varieties of apricots is all any one man should think of planting, and then, when a purchaser comes to look at the crop, he can tell him just what he has. If peaches are planted, two varieties of freestones and two of clings are all that should be planted. In this way he can extend the season six weeks to two months and will have a block of some one thing to offer. These remarks apply to the canning trade.

How to Market.—This is something no grower should worry about, if he will make the growing of choice fruits and of the right varieties his aim. Proper pruning and thinning will go a long way to-

ward the first, and then the fruit will sell itself. The market is never overstocked with choice fruit, but is burdened with poor. If the canner was not asked—yes, forced—to help the grower to find a market for fruit that should never have been grown on the trees, let alone allowed to leave the orchard, he could do much different. It costs the canner just as much for case, can, labor and general expenses on the cheapest can he packs as on the best. When he sells it he finds the market overstocked and his legitimate profit is taken from him, while with fancy fruit he can pay more, simply because he has not the competition to meet.

We, as cannerymen, send out a card with every can sent out. When the housewife places the goods on the table, finds them good, and her verdict causes her to remember the brand and desire to get it next time she purchases. If it was bad, the grocer may insist it was an exception and induce her to try it again, but when the next can shows up poor, that settles it.

Who does this react on? Does not the grower of this fruit have to share the loss?

Mutual Interests.—The grower and canner should consider themselves in partnership in the business. The canner should encourage good fruit and discourage poor. The growers should be glad to have the canner make a success. In fact, reciprocity in its fullest meaning should exist between them.

To sum up canneries and their advantages, I would say this, were I out of the business I would stay out, but while in it I shall endeavor to run it to the very best advantage of all concerned and try to give the best advice at my command to the grower, so when a good year does come, which will surely be in the near future, we will all be glad we stayed by the old farm.

THE POULTRY YARD.

Eggs in Water-Glass Solution.

Readers manifested much interest in this subject when we made our first mention of it a few weeks ago, and we promised fuller particulars as soon as available. The *New York Produce Review* furnishes these and alludes to it as in many respects it is the best known process yet available for keeping eggs good, inasmuch as it is accompanied by fewer disadvantages.

What is Water-Glass?—Water-glass, or Wasser-glass as the Germans call it, is a very curious substance, well known in certain industries, but almost unknown the general reader. A better name for it is soluble glass. It is called a glass because it is an alkaline silicate, and it is termed soluble because it will dissolve in water, or rather will mix with water very easily. In appearance it looks like a thick sugar syrup, and might easily be mistaken for it. It is made by fusing silica, for example quartz, with sodium and potassium carbonate, adding a little coal in order to aid the reaction. The commonest grades are manufactured by fusing two parts of quartz sand with one part of sodium carbonate and one-tenth part of small coal. Most of the soluble glass or water-glass which is on the market is used for making artificial stone, but large quantities are used for rendering wood fireproof, as a detergent, and for protecting natural stone of good quality but which does not weather well. These uses suggest the reason why water-glass is so useful in the preservation of eggs, for in solution it enters the pores of the egg and probably combines with the calcium carbonate of the egg-shell, forming an impervious cement which prevents the ingress of air and the germs which it may contain. It ought to be pointed out that treatment with water-glass, as with lime water, will reduce the elasticity of the egg-shell, so that when the contents of the egg swell during boiling the shell will crack, unless relief is afforded by puncturing one end with a fine needle immediately before cooking.

The Way to Use It.—In order to use water-glass successfully, the following plan should be adopted: Take one part by measure of water-glass (e. g. one gallon) and ten parts by measure of water that has been well boiled and cooled (e. g. ten gallons). Place the water and the water-glass in the vessel in which the eggs are to be preserved, and stir the ingredients well together; then put in the eggs, or the eggs may be packed in the vessel first of all, which is perhaps the better plan, and then the mixture of water and water-glass poured over them until the topmost layer is completely covered. The reason for boiling the water is obvious to any one who knows that the process of boiling kills any putrefactive germs which may happen to be in the water at the time, but great care must be taken that the water is not used hot or even warm; it should be cooled down to the temperature of the air before the water-glass is mixed with it, and the mixture poured over the eggs. On the whole it is the best plan to purchase water-glass of the best quality, and even then it is quite cheap. It is generally bought by the hundred weight, and, though the market varies, it ought to be procurable at about ten shillings or twelve shillings a hundred

weight. The reason why we recommend purchasing the best is that sometimes common kinds of water affect the fingers in handling, and if such is employed there will probably be trouble with the workmen, who are quick to object to anything which, as they say, "perishes" the hands.

Eggs kept in this solution of one part water-glass and ten parts of boiled water have been known to keep good for at least nine months, but it goes without saying that the eggs must be fresh when they are immersed in the solution.

Use of Sunflower Seeds.

Some readers may grow a crop of sunflowers around the tank-house or other place where water is handy and thus help out their supplies of poultry feed. P. H. Jacobs tells the *Rural New Yorker* that sunflower seeds have very nearly the composition of old-process linseed meal, except that they contain more oil, having about 32 per cent of protein, 7 per cent of ash (lime and other mineral matter), 34 per cent of starch (carbohydrates), and from 10 to 15 per cent or more of oil, according to variety and soil, hence they contain about three times as much protein as corn, about half as much starch, and three and a half times as much mineral matter. They contain too much oil to be given as a regular dairy ration, having a tendency to induce moulting, hence are excellent for moulting hens. A quart of seed to a dozen hens, three times a week, in place of grain, should be ample. It is not necessary to crush the seeds. The yield is about twenty bushels per acre, and they do not pay as a crop, unless use can be found for the stalks, which tax the land severely. They are grown, however, in small patches, more because they cannot otherwise be obtained. The stalks are utilized as fuel in some localities. Linseed meal is an excellent substitute for sunflower seeds.

Should be Cautiously Fed.—Fowls generally seem very fond of these seeds, says H. P. Wheeler, and they appear beneficial when fed in moderate quantities. Whenever the seed can be obtained at prices comparable with those of other grain foods, I would feed it daily to the extent of about one-quarter or less of the ration, feeding it preferably whole. Although the protein content of the seed is high, about equal to that of good wheat bran, the percentage of fat or oil is large, over 20 per cent, and I would expect that a liberal feeding would often prove too fattening.

Eggs in Cold Storage.

The Western Refrigerating Company, says the *Courier*, have now got fairly at work at Petaluma, and it keeps them busy to care for the eggs that come rolling in. Many of our farmers are taking advantage of this way of disposing of their eggs, instead of consigning them to the avaricious commission man to do with as he thinks fit, as they can now obtain the highest market price, less freight. Two candlers, one of whom is an expert who can handle 900 dozen eggs a day, examine every egg, and all that are not of the best quality are not put into storage. This is an interesting sight in which the eye, ear and sense of feeling are employed. A slight, barely perceptible cloudiness as the eggs are held between the eye and the candle, a feeling that the contents are moving in the shell as the egg is rapidly turned, a dull ring when the eggs are touched, instead of a clear, ringing sound; all these indicate that the egg is spoiled, or in danger of becoming so, or is cracked sometimes so slightly as not to be distinguished in the light. None but perfectly fresh eggs are put in cases for storage, the others being sold immediately for other purposes. Some of the larger poultrymen are putting eggs in the storage on their own account, to be kept until, with the declining autumnal sun, the hen also declining to lay, the eggs are worked off at an advanced price.

THE DAIRY.

The New Iowa Creamery Law.

The Iowa Legislature, says the *Produce Record*, has enacted a new law for the government of creameries in that State, owing to some complaints on the part of dissatisfied farmers, concerning the testing of their milk. By the terms of the law its execution is lodged in the hands of the State Experiment Station at Ames, and the Dairy and Food Commission at Des Moines. It is provided that all machines for testing milk be sent to the Ames station, there to be examined and a certificate issued if found reliable. Also, that each creamery procure from the State Dairy Commissioner one standard milk measure and one standard test bottle. These milk measures and test bottles are sold by the State at 25 and 50 cents respectively.

The whole aim of the State is to compel such a course of procedure on the part of creamerymen as will give to the patron that which is his due. The office of the State Dairy Commissioner is receiving hundreds of applications for these measures and bottles. Every measure and bottle is numbered and

the number is entered in the books of the Dairy Commissioner so that he can tell instantly in what creamery the same is in use. He also issues a certificate to every creamery man who purchases these supplies.

Over-ripening Causes White Specks.

A theory advanced by Prof. Wing in his book on "Milk and Its Products" regarding white specks in butter is worthy of attention by buttermakers.

We give it for their information, suggesting that over-ripening is an evil outside of the white specks, as the butter will sooner lose its high, quick flavor and go off.

When too much lactic acid is developed in the cream, the casein is firmly coagulated, and in the process of churning is broken up into minute granules, which become incorporated into the butter in the form of white specks or flakes of casein. Such white specks besides injuring the appearance of the butter, greatly detract from its keeping qualities, as the putrefactive fermentations soon set up in them and give rise to disagreeable flavors. Danger from this source is liable to be present if the coagulation of the cream has gone so far that any whey has separated. The cream should in all cases be churned before the ripening process has reached this point.

It was formerly supposed and is still generally believed, that the production of an excess of lactic acid in ripening tends to a loss of butter, from the fact that the acid dissolved or "cut" the fat, causing it to disappear. This has been shown both theoretically and practically, not to be the case. Lactic acid has no appreciable effect upon fat, so far as dissolving or decomposing it is concerned, and cream may be held until the whey has separated to the full extent without any loss in the amount of butter that it is possible to churn from it.

The chief evil effect in over-ripening is in the production of strong and undesirable flavors accompanying the undue production of lactic acid.

THE FIELD.

Notes on Corn Planting.

Corn planting has proceeded rapidly on moist lands during the last few days and will continue for some time to come, for corn planted late for fall growth is a great success in California if the land holds moisture enough. In view of these facts and the other fact that many people are planting corn this year who do not usually grow the crop, we take from the *Breeders' Gazette* some suggestive notes by an Ohio corn grower.

To Get a Good Stand.—A good stand is the first essential for a good crop. This requires, then, good seed and a seed-bed of such uniform texture and moisture as to give each hill a fair chance to germinate promptly. How to secure this must be decided each year according to the condition of soil and season. When we are having frequent rains the plan of harrowing and rolling and dragging, as many do, is the most risky. When the soil is fairly well supplied with moisture, and the planter with press wheels is used, there is no need of the roller or plank drag after the harrow. The harrow does for the soil what the roller or drag will not. It compacts and fines the soil below and does not deceive us by the flat, smooth surface left by the roller or drag. The surface after these is readily run together after a heavy rain and the brakes and weeds start worse than after the harrow. We have seen the elaborately prepared field caught by a heavy rain just when ready to plant, and the delay is great, and some soils get so hard when dry enough to plant that the average blade planter cannot do good work. This is not the only trouble. The soil seems to have lost all friability and remains sad all the season and is less able to resist drouth. Nor can it be put in good order by again harrowing before planting. These are some of the problems that meet the corn grower in preparing for planting. There would seem to be enough tools to meet all the contingencies of seasons and soils; but the plow, harrow, roller and plank drag as used have not protected us against the unfavorable conditions following such effort to secure the best seed bed possible.

Planting.—If planting could be done after the harrow, and the soil after the planter be fine enough to secure prompt, uniform germination, we would save the time and labor of rolling or dragging before the planter and escape the disaster of having the ground run together and baked after a heavy storm. If we can secure the fineness and compactness requisite where the corn is placed by the planter we need not work the space between the rows as fine before planting, for the middles can be worked down by the roller and cultivators immediately after the corn is planted or at such time as the conditions of soil and weather may dictate. By securing some device, then, by which we can get a fine condition for seed to germinate where the seed is placed, we need not spend time and labor before planting to get the en-

tire field ready before starting the planter. We would thus save labor and escape the disaster of having our soil put out of condition again.

Fining the Soil for the Seed.—We may need, then, some device to precede the planter and make fine the soil for the seed. We used to get this fortunate condition before the days of the planter, when the boy and the old horse with a log attached followed in the furrow and made the soil fine and the corn was covered with a hoe. Then the farmer did not spend his strength rolling and harrowing and dragging the whole field before he began to plant. He secured an ideal seed bed and left the middles to be worked after the corn was planted.

We have the planter now and check-rower, and by the fining of the whole field before we start the planter we are liable to loss of time and conditions that we want to save. We have found that we can make an implement to precede the planter that leaves the middles as the plow or harrow left them, and yet it pulverizes a track about a foot wide as fine as a garden bed for the seed. We find it saves time and labor, and, what is more, it delivers us from the annoyance and loss of having our well-meant efforts turned into loss and disappointment. It consists simply of two planks, 2 inches thick, 12 inches wide and 6 feet long, set with harrow teeth and framed together, so from center to center they measure the same as our planter. To make it more convenient to turn we swing it between the wheels of a riding cultivator and lift it by levers with the foot as we ride. When the ground is rough the driver can throw his weight on the pulverizer. In average ground its weight is sufficient. It acts as a harrow and plank drag, but its work is confined to the two spaces of one foot width each, where it pulverizes and compacts the soil ready for the planter to follow. It is a saving of labor and protects against the disaster that follows heavy rains on rolled and dragged land. It gives us a perfect seed bed and enables us to get the corn planted earlier and to take our time to cultivate the middles; this we can do when the conditions call for it.

AGRICULTURAL REVIEW.

CALIFORNIA.

Butte.

SHEEP SHIPMENT.—*Enterprise*, May 26: The largest train-load of stock to be brought to Chico from the southern counties arrived to-day. The train consisted of twenty-one cars, shipped from Someo, Santa Clara county, and the sheep are to be taken to Big Meadows for summer pasture. The animals were crowded into the cars, there being from 130 to 140 in each car. They are very poor and some of them were trampled to death before arriving.

THE HEMP BUSINESS.—*Gridley Herald*, May 28: John Heaney is getting ready to rebuild his hemp mill, which was recently burned. A large warehouse at Biggs has been purchased and will be removed to the premises. In this will be placed new machinery. Mr. Heaney reports his growing crop of hemp to be in good condition. The crop on Kirk's place is also growing finely. In securing the seed for planting on the Rau place, the dealers supplied Finnish seed instead of the Italian variety, and in consequence the crop on this place is now about ready to head out. It will not be nearly as tall as the Italian hemp, nor will it yield anything like the amount of fiber which is secured from the latter. Norman E. Kirk shipped two cars of hemp to New York this week. This shipment makes three cars this season. Breaking on this place will be finished in about two weeks.

Fresno.

SQUIRRELS.—*Sanger Herald*, May 28: Farmers report that squirrels are more numerous than ever before and are eating up what little grain there is left on the plains. Acre after acre is being cleaned up by these rodents that appear to have left the foothills in droves with the intention of accumulating a full supply of wheat on the plains to last them through another dry season. Poison has been distributed in large quantities, yet the rodents seem to increase just the same.

Kern.

ALFALFA.—*Echo*, May 26: New alfalfa is already going at from \$9 to \$10 a ton. It took three tons to bring this amount not long ago. "Are you not better off now than you were then?" was asked a prominent farmer yesterday after taking into consideration the shortage of the crop on account of the drouth and scarcity of water. He answered: "I will make at least six tons to the acre this year, and at \$9 a ton that means \$54 an acre. I am satisfied; I will make some money and I don't see why others will not do the same."

ROAD SPRINKLING.—An experiment at road sprinkling is to be tried in Kern county on a five-mile stretch as a test. It is proposed to sink wells half a mile apart, from which sprinkling tanks may be filled by a steam-pump attachment on the wagons.

Kings.

MORE WATER.—E. Bond has been up at the Sequoia mills. While he was there about 3 inches of rain fell; also a good snowfall farther up. The mountains are full of sheep, and cattle in the pastures are looking well, feed being very good.

TULARE LAKE.—*Hanford Journal*, May 27: The past year has witnessed a wonderful change in the appearance of Tulare lake. It is now only about ten miles square, whereas not so very many years ago it was forty. The waters of the rivers which used to flow into the lake have been so closely appropriated of late years that now a very little water finds its way into the lake, especially in a dry season like this.

Los Angeles.

LATE CROPS.—*Pomona Times*, May 25: Thousands of acres have been planted to corn, sorghum and pumpkins since the rain of the 15th, and the work is still going on. A vast amount of feed for animals will be produced and many will be able to carry their animals through that but for the rains would have had to practically lose them, for they could not be sold for more than a dollar or two apiece.—C. A. Loud is planting corn, pumpkins, sorghum and perhaps other forage plants, southeast of town. He found the ground wet down from 12 to 15 inches, and, with but little if any irrigation later on, crops of forage can be grown, if no grain.

Monterey.

IRRIGATION.—*Pajaronian*, May 26: The Salinas Valley Water Co. has filed an appropriation of 16,000 inches of water

under 4-inch pressure from the Salinas river. The water is to be taken from a point near Soledad. This is the company which proposes to irrigate the Salinas valley between Soledad and the ocean.

Napa.

CROPS.—*Sentinel*, May 26: The yield of prune orchards in Napa county will exceed a half crop. The recent fall of rain has been beneficial to hay and grain in this county, and an estimate of what it will bring has been reduced from \$15 to \$12 a ton in the past two weeks.

Orange.

CANNING FRUIT PRICES.—*Colton News*, May 27: The Orange County Preserving Company has already arranged for the prices to be paid for fruit. First-class apricots will bring \$18 per ton and second-class \$13.50. Peaches will be paid for at the rate of \$18 per ton.

Placer.

CLING PEACH SALE.—*Newcastle News*: Some of our heaviest fruit raisers have sold their Cling peaches for \$50 per ton.

Riverside.

FUMIGATING.—*Press*, May 28: The horticultural commissioners begun fumigating Monday night, after a layoff of six weeks. On account of the blooming season, active operations will now be prosecuted. The commissioners will make a trip of inspection among the orange and lemon groves of the county in a few days, with a view to estimating the amount of work necessary to rid them of scale.

San Bernardino.

SHOOTING TANAGERS.—*Redlands Record*, May 25: The Louisiana tanager is doing great damage. There are thousands upon thousands of them here. A most beautiful bird, it is the most destructive to cherries of any of them. It is necessary to hunt and kill them continuously; hence the continuous bang of the shotgun from morning till night near the different orchards.

REDLANDS CANNERY.—*Facts*, May 28: At a recent meeting of the stockholders of the Redlands cannery, F. U. Nofziger was elected president, G. B. Holmes secretary and C. J. Holmes superintendent. The plant will be operated this season to its full capacity, as it is now evident the fruit crop will be sufficient to tax the cannery to its utmost. Work will commence on apricots about July 1. Many contracts have already been made. There will be a good market, as respects the demand and the prices this year.

CHERRY GROWING.—*Andrews Brothers* have shipped cherries to Santa Ana, Riverside, San Bernardino and other points. These early cherries are of the May Duke, Morello and Gov. Wood varieties, and are grown on the mountain ranch of the Andrews Bros. in Yucaipa valley. Richmonds and Tartarians will be shipped next week. Prof. Andrews expects to market about thirty tons, but would have had a larger crop except for the birds.

BEETS.—*Chino Champion*, May 27: Mr. Ruopp tells us that there is a good stand of beets to date on over 2000 acres, and that acreage is all thinned. There are over 1000 acres more planted which give promise of a good stand. Since the rain of last week there have been planted in the neighborhood of 300 acres. Much of this is now up. The warm, moist soil is pushing the growth vigorously now on all the fields. The rain was of immense benefit. On many of the fields where the stand was thin before, the dormant seed has since sprouted and the plants are growing strongly. The yield will be greatly increased throughout.

San Diego.

HOME GARDENING.—*National City Record*, May 26.—H. L. Woodburn is making a home at Nestor to stay. His aim is to make his home tract supply his table; hence he succeeds well with vegetables, sweet potatoes, beets, Swiss chard, asparagus, corn, and such corn for fodder. His plan for making fodder is to plow a trench, say two furrows deep, three wide, line the trench heavily with manure, cover with few inches of dirt, then turn in the water; sow the corn thick in the trench, and cover. The results as compared with the usual method of planting and running a little water on the top of the ground, is marvelous. If you want to raise fodder instead of failure, use the trench plan.

San Luis Obispo.

SEEKING FRUIT.—*Arroyo Grande Oracle*, May 27: A huyer for Fontana & Co. of San Francisco has been in the valley contracting for pears, peaches and apricots for canning. He met with good success. The fruit crop here, with the exception of 'cots, will be greater than that of last year.

CELERY.—*Mrs. A. D. Barling* of the celery farm informs us that the cold spring has retarded the growth of plants to such an extent that out of sufficient seed to raise plants to set out 200 acres they will be fortunate to get enough plants for 50 acres. The same conditions are experienced on their ranch in the southern part of the State.

Santa Barbara.

DESTRUCTIVE BIRDS.—*Lompoc Record*, May 25: A new bird is accompanying the tanager on its marauding excursion northward. Its habits are the same, attacking with the tanager all kinds of small fruits, from the sweet strawberry to the sour currant. This new bird is dark in color, wilder than the tanager, hence much harder to destroy.

Santa Clara.

HAY CROP.—*Herald*, May 27: It would be foolish to assume that there has been no failure of the hay crop. That is true of some sections, but it is also true of others that there have been good crops, and that the case actually stands much better, taking the country at large, than it was supposed to stand a few weeks ago. As the season progresses our people are gradually finding out that they are better off than they thought they were.

Santa Cruz.

APPLES.—Packers and orchardists unite in claiming that the Newtown crop of Pajaro valley has never promised as well at this time of year. A big crop of Newtowns can be profitably handled. The Bellefleur crop appears spotted, and shows stronger in Watsonville school district than in the northern part of the valley. Last year the showing was the other way. Before picking time it is quite probable that the usual heavy crop will be found. It will be easier to locate them then.

BEE PULP.—The pulp pile at the terminus of the factory cable line is a busy place. The Watsonville Cattle Co., Christy & Wise and John Lacrahere are taking large quantities daily from the big deposit to feed to their stock, and several dairymen are also being supplied. The pulp is in choice feeding condition. There is an immense pile of it, by some estimated at over 25,000 tons.

SILVER PRUNES.—*Sentinel*, May 28: W. A. Young has his people busy thinning out the Silver prunes, the trees being overloaded. They were as thick as a crop of cherries. Last year the fruit was all that could be desired, large and luscious as mountain fruit alone can be, but this year the crop promises to beat all records. All the fruit growers in this locality report prospects of a very full crop.

STRAWBERRY GROWERS.—*Watsonville Pajaronian*, May 26: The strawberry growers of Pajaro valley met last Saturday afternoon and elected Jos. Albright president and Geo. H. Leland secretary and treasurer. Jas. Holohan, F. D. Blackburn and E. Werner were appointed a committee on by-laws, and Jas. Hopkins Jr., R. W. Eaton, R. Pinto, Jos. Albright and Geo. H. Leland were selected as members of the executive committee. Return of sales, the auction system and the

unsatisfactory condition of the market were discussed, and the growers were united in the conclusion that a change for the better had to be made or the business would be conducted at a loss. It was agreed to permanently organize next Saturday afternoon. On a test vote being taken the auction system was unanimously endorsed as the best for the growers. The auction sale of strawberries was discontinued last week. The San Francisco commission merchants and peddlers combined in a successful boycott against it.

Solano.

HARVESTING.—*Suisun Republican*, May 27: Harvesting operations have begun at Elmira and summer-fallow grain, according to the report of Frank Clark, bids fair to yield well. Farmers have begun to head harley and within a few days quite a number will begin to cut their grain.

CARQUINEZ CANNERY.—*Benicia New Era*, May 28: The Carquinez Packing Company is now running almost to its full capacity on cherries. About seventy men are employed. About two carloads of cherries are necessary every day.

Sonoma.

SEBASTOPOL CANNERY.—*Times*: Miller & Hotchkiss will operate their big cannery with a full force this season. Since the beginning of the year many improvements have been made and the entire plant is now in readiness for a fine pack. The building has been enlarged and will now accommodate about 200 more people than heretofore. This makes room for almost 500 hands.

SPANISH MERINOS.—*Dave Seawell* shipped thirty-one head of thoroughbred Spanish Merino hucks to M. Doyle, a sheep raiser of Oregon. Men of authority say that Mr. Seawell has one of the finest bred bands of sheep in this State.

CANNERY.—At the Santa Rosa cannery of Cutting Packing Co. the interior is being entirely reconstructed to accommodate new machinery. The facilities for handling fruit this season will be greatly improved. Two additions to the building are about completed. One is 80x25 feet and the other 50x20. Manager Van Alen says his company expects to do a larger business here this season than ever.

RASPBERRIES.—*Santa Rosa Democrat*, May 28: The first raspberries of the season came from Windsor on Thursday to Farley Bros. This is the earliest date on which raspberries have been known to appear in the local market.

HOP PROSPECTS.—The recent rain has greatly benefited the hops on the highlands. The yield in this county for the coming season promises to be as large as ever. It is difficult to judge at present as to the quality of the crop here. The market for the coming season's hops promises to be good. No overproduction is expected.

HAY.—The late rains have brought the hay out in magnificent shape. The hill and valley feed is starting anew; and while it is true that the old or dry feed is lost, its absence will be much more than made up by the fine new growth now well started. So little hay is down that the late rains will do no appreciable damage, while much of the growth that had been marked for hay will now be threshed for grain, much to the grower's benefit.

WOOL CLIP.—*Cloverdale Revueille*, May 28: The spring clip of wool is already being brought to town for storage; so far several hundred bales have arrived. Mr. E. M. Hiatt's clip consists of forty-five bales. Mr. Hiatt is the largest wool grower in this section and his product this year is considerably larger than last season. The clip generally is exceptionally clean and long fleeces, and the output is considered much ahead of last year.

Sutter.

GRAIN.—*Live Oak Cor. Yuba city Farmer*, May 23: The winter sown grain is thin on the ground, but the plant is in excellent condition and is maturing nicely, with a promise of fair yield. Many of the farmers express the belief that they will get more grain this season than they have any one harvest for several years, and the good effects of the cool weather and recent rains seem to bear them out in their expectations.

BARLEY.—The first new harley for the season of '98 was threshed on the George Summy place near Sutter City this week, the yield being as large as usual.

Tehama.

CATTLE MOVEMENT.—*Red Bluff Cause*, May 28: A train made up of twenty-five cars filled with cattle arrived here Wednesday evening from southern California. There were 600 head in all, and early they were driven to the Cone place in Antelope valley, and will be driven from there to Big Meadows to pasture during the summer. They were in poor condition, and forty head died on the train in transit.

Tulare.

BEE INSPECTION.—*Visalia Times*, May 26: Josiah Gregg, the official bee inspector of Tulare county, says the cool weather is a poor time to inspect bee hives. When the weather is warm the foul brood can easily be detected anywhere by the smell. Hence he will wait till the hot weather returns before prosecuting his duties further. In the last five or six weeks Mr. Gregg has visited 3000 bee colonies in this county and found most of them in good condition. In perhaps six cases he found diseased colonies, but only one of these was a new case or in a place where he found no disease last year. This shows that the disease is not spreading much. Mr. Gregg reports the bees doing quite well, and says he has noticed that bees always do well in a dry year. There are about 4000 colonies of bees in Tulare county; hence he has about 2000 more to inspect.

WATER SUPPLY.—*Porterville Journal*, May 27: This storm has left considerable snow in the mountains, which almost insures all the water necessary for irrigating purposes this season. There will be no water to waste.

Yuba.

ADVANTAGE OF CHEAP BAGS.—*Marysville Democrat*, May 31: A number of farmers in this part of the State, who a month ago said they would have no use for grain bags this season, are now congratulating themselves on the nice sum they will save by the reduction in the price of bags recently made at the San Quentin prison. Some farmers in this favored garden spot of the world will have money to loan after harvest.

BUYING HARVESTERS.—J. A. Onstott, G. D. Wickman and W. S. Harkey have each purchased a new harvester this spring.

ARIZONA.

HAY BUYING.—*Phoenix Stockman*: Hay buyers from California are present with us almost always these days. Other valleys where hay is raised are being visited by buyers and all the available crop is purchased. A good stand of hay is reported in this valley, which is being cut and prepared for market. It is said that in a few instances this hay is haled before being properly seasoned, which will have the effect of discouraging buyers if the unwise practice is not stopped. The price paid for hay is a good one, and the demand from our neighbor State ought to be filled by the very best the valley affords. In addition to the thousands of acres of alfalfa which will cut three crops of hay, a considerable acreage of grain hay is being cut and put in stack. Californians are not only seeking a good article of hay, but the millmen of southern California, or we may say Los Angeles, are with us looking up the wheat supply of the valley. The farmer need not worry about the demand for his product, but his entire energy ought to be bent in the direction of more and better crops. Arizona crops are now making for themselves a reputation in a State where the quality is always good.

THE HOME CIRCLE.

Tennyson's Patriotism.

And as months ran on, and rumor of battle grew,
 "It is time, it is time, O passionate heart," said I
 (For I cleaved to a cause that I felt to be pure and true),
 "It is time, O passionate heart and morbid eye,
 That old hysterical mock disease should die."
 And I stood on a giant deck, and mixed my breath
 With a loyal people shouting a battle cry,
 Till I saw the dreary phantom arise and fly
 Far into the north and battle and seas of death.
 Let it go or stay, so I wake to the higher aims
 Of a land that has lost for a little her lust of gold,
 And her love of a peace that was full of wrongs and shames
 Horrible, hateful, monstrous, not to be told,
 And hail once more to the banner of battle unrolled;
 Though many a light shall darken, and many shall weep
 For those that are crushed in the clash of jarring claims,
 Yet God's just wrath shall be wreak'd on a giant liar,
 And many a darkness into the light shall leap
 And shine in the sudden making of splendid names,
 And noble thought be freer under the sun,
 And the heart of a people beat with one desire;
 For the peace that I deemed no peace is over and done.

* * * * *

Let it flame or fade, and the war roll down like a wind,
 We have proved we have hearts in a cause, we are noble still;
 And myself have awakened, as it seems, to the better mind.
 It is better to fight for the good than to rail at the ill;
 I have felt with my native land, I am one with my kind.
 I embrace the purpose of God and the doom assigned.

A Rare Jewel.

"Strawberries! Strawberries! Very fine and fresh—lady, please buy."
 "No—I do not want any, child."
 And the strawberry girl passed on.
 Madeline gazed after her with sad, violet-gray eyes.
 "Poor and proud! Proud and poor!" she murmured to herself. "Oh, my God! why was I not yonder ragged strawberry girl, or even the child who sweeps the crossings, and earns an honest penny now and then? But now—now my hands are tied by mamma's absurd prejudices! Well, Beatrice, what is it?"
 For her younger sister had come noiselessly in.
 "The bill from the baker's, Madeline."
 "Another bill! Did you tell the man we had no money, Beatrice?"
 "What would have been the use, Maddy? Of course, I did not tell him."
 "And mamma?"
 "She does not know—she is reading in the parlor; she will not let me mend the tablecloth; she says it is not work for ladies. Oh, Maddy, what shall we do?"
 Madeline arose and began pacing impatiently up and down the room.
 "Hush!" she cried, "there is a ring at the bell. It is Mrs. Benjamin again. Go tell her I am engaged—busy—gone out—anything you please. No—stay! Perhaps I had better see her, after all."
 And Madeline went downstairs to where Mrs. Joyce sat in faded silk and darned lace, with white, wasted hands folded in her lap and an embroidered ottoman under her feet.
 "It is like a dream," Madeline said to herself. "And to think that there is nothing in the house for dinner! Perhaps Mrs. Benjamin will ask mamma to dine, and Bee and I can send out for half a pound of crackers. We can eat anything."
 And through her disjointed meditations her mother's soft, sweet voice sounded.
 "To the White mountains? With you? My dear Mrs. Benjamin, you are very kind, I am sure, and Maddy must use her own discretion about accepting. Do you hear, darling? Mrs. Benjamin wants you to accompany her to the mountains as soon as she has secured

a nursery governess for her dear little boys. I am sure it would be a charming opportunity for you to see a little of life, for circumstances, you know, preclude me from giving you much variety.

Madeline looked up with a sudden glitter in her eyes.

"A nursery governess? I think I know of some one, Mrs. Benjamin, who will suit you, if—your terms are at all liberal."

"Three hundred a year and all expenses paid," said Mrs. Benjamin. "I think it isn't all stingy. Who is it, Madeline?"

"A young lady—a friend of mine. When do you want her?"

"At once; and then we can be off before the wilting weather comes in. You will accompany us, Madeline?"

"Oh, of course—of course. That is, if mamma approves." And Mrs. Joyce smiled faintly.

"How ready the young birds are to fly away and leave the parent nest," she sighed. "Well, it is but natural. I can hardly blame Maddy for being anxious to leave so dull a place as this."

"Mamma," cried Madeline, passionately, "it is not that. Oh, mamma, if I could only tell you!"

And she hurried out of the room with a choking gasp in her throat.

Mrs. Benjamin did not like scenes; she looked on with civil wonderment. But she understood it all—after a little while.

"The landlord again!" cried Mrs. Joyce, in her soft, well-modulated voice.

"Mamma," said Beatrice, hurriedly, "it's three months since he was here last, and—don't you remember—we didn't pay him then?"

Mr. Atheling himself followed on her footsteps. Mrs. Joyce drew herself dignifiedly up.

"This intrusion is scarcely called for, Mr. Atheling," said she. "My daughter transacts my business affairs for me—my daughter, who is now at the White mountains, or going there immediately."

"Can I see her?" Mr. Atheling asked, quietly.

"I presume so, if you go to Mrs. Bruce Benjamin's, No. —, Fifth avenue."

"Thanks, madam. Pray excuse me for disturbing you."

Mrs. Joyce bowed with the air of an ex-empress, and Mr. Atheling withdrew.

"That's over, thank goodness," said she, and buried her nose once more in the pages of a book. But Bee was by no means certain that it was over.

"Mamma might bear some of her own burdens," she murmured. "It isn't fair upon Maddy to send people there."

Mr. Atheling himself walked along the street, with something of indignation rising up within his breast.

"Madeline Joyce is a good and beautiful girl," he said to himself, "and for her sake I have borne with these people longer than I otherwise would. But—dress and gayety and endless expense at the White mountains, with a year's rent due—that is altogether a different matter. I have been mistaken in Madeline Joyce, and the sooner she understands it the better. A mere society butterfly—too proud to work, too frivolous to stop and think. And I had fancied her so different!"

Mrs. Benjamin's tall footman put on a supercilious grin as Mr. Atheling asked for Miss Joyce.

"The new nursery gov'ness," said he. "Upstairs—second story, back, please."

Mr. Atheling, somewhat surprised and a little annoyed, ascended the staircase himself.

The door was half open and he could see Madeline Joyce, a book in her lap and two or three chubby little boys swarmed around her, evidently intent on anything and everything but their lessons.

She started up, crimson and confused at the sight of the dark, handsome face she knew so well.

"It is about the rent," she gasped.

"Yes, yes—I knew. We can not pay it just yet, but—but—"

He smiled as he took her hand.

"You are not going to the White mountains, then?"

"Yes, I am—as Mrs. Benjamin's nursery governess. Only mamma does not know. It would break her heart, Mr. Atheling. And the very first quarter's salary I receive shall be forwarded immediately to you. For—"

"Madeline!" he burst forth, impulsively, "I have mistaken you—I have misjudged you altogether. Will you pardon me?"

"I don't understand you, Mr. Atheling."

And then he explained. Madeline's scarlet upper lip curved.

"And you believed I could go fashion hunting, pleasure seeking, while—while we owed money that we could not pay? Oh, Mr. Atheling!"

Five minutes later Master Clarence Benjamin rushed down to his mother's boudoir.

"Mamma, mamma!" he howled, "come quick. There's a strange man whispering to Miss Joyce, and she's crying."

But when Mrs. Benjamin reached the scene of action the tears were all dried up, and Madeline was smiling and coloring radiantly.

"Oh, Mr. Atheling, it is you!" cried the lady, recognizing the wealthy landlord. "And Maddy—"

"I may as well tell you," said Madeline, softly; "Mr. Atheling has asked me to marry him, and—"

"And you will lose your nursery governess," said Atheling, smiling.

Madeline Joyce never gave up her honest pride. And she went to the White mountains, after all, but it was as a bride.—New York News.

Chaff.

"How did Grassfield do with his book, 'Success in Farming'?" "Splendidly. The book paid for all he lost on the farm."

"I'm awful glad, mamma, that I've begun to go to school." "Why, dear?" "Because we have a holiday every Saturday."

"Every man is the architect of his own fortunes." "Yes, and nine times out of ten he doesn't get paid for his work."

When her husband complained that the turkey he had eaten for dinner did not set well, his wife explained that it was not a hen turkey.

"Podgen's dairy is having great vogue just now." "What started it?" "He has placarded his milk-wagons: 'We Boil All the Water We use.'"

"Look here, Guggenheimer, that bicycle suit you sold me ripped the first time I straddled a bicycle." "Straddled it? Vy, mine vrient, dot sood vas made vor a lady's vheel!"

Hotel Clerk: "Your bundle has come apart. May I ask what that queer thing is?" Guest: "This is a new patent fire escape. I always carry it, so, in case of fire, I can let myself down from the hotel window. See?" Clerk, thoughtfully: "I see. Our terms for guests with fire escapes, sir, are invariably cash in advance."

Woman bicyclist (hysterically)—Oh, Mr. Officer, Mr. Officer, somebody has stolen my bicycle!

Officer—What kind of a bicycle was it?

Woman bicyclist—Why, it was a high-geared, hollow-axle, self-oiling, detachable tires, movable spoke studs, double ball bearings, and—oh, yes, now I come to think of it—my baby was attached to the handlebars.

"Now," said the fussy old gentleman, putting one of the biggest berries in his mouth and picking up another, "what is the sense of having that sign read 'Fresh strawberries for sale?' Don't you see that 'fresh strawberries' would be enough? Don't you suppose that everybody knows they are for sale?" "I dunno," answered the grocer; "some folks seem to think I'm givin' them away." And the old gentleman put the berry back in the box.

Yes or No.

"Elopements are such romantic things," said a fluffy-haired girl to a group of her friends.

"Oh, very!" answered the cynical maiden, who thought herself clever, especially if it is a horribly wet night, and the watch dog, with its usual perversion, fails to recognize you."

"Yes, I admit," chimed in the girl with the arched eyebrows, "elopements are romantic, and that is precisely all they are, and the romance quickly gets rubbed out by the india rubber of poverty, misery, and cold dinners, which always accompany runaway matches."

"Yes, and just fancy having no wedding dress, no presents, and not even a wedding cake! I shouldn't think I was married unless I had a great big cake," laughed the girl with brown eyes.

"You are of the earth earthy, my dear," said the cynical girl with the sweet voice. "But looking at the elopement question through the eyes of common sense, it really doesn't pay. If a man is not manly enough to marry a girl with her parents' consent, he will hardly make a reliable partner for life, to my way of thinking."

"But supposing he is manly enough to ask her people, and supposing they refuse their consent?"

"Then, my dear Fluffy, you must take it that they, having a wider experience of the world than you, must know what is best, and you may always rely on this: that their parents would do all in their power to promote the happiness of their children, even if only from a selfish motive, for, if their offspring marry well, it reflects credit on them, so to speak."

"I can't imagine how elopements ever came to be invented," cried Fluffy Head. "By man's selfishness and unmanliness, and woman's thoughtlessness and carelessness, if a girl with an elopement germ in her head were only to picture to herself how her behavior would affect those she leaves behind, I guess she would hardly respect the lover who proposed that she should violate the trust her mother has in her."

"Besides that side of the question," said the young matron, "there is also the practical side. How are you going to be married?"

"Oh, by special license, of course," airily said Fluffy.

"Really! then what would be his reasonable reason? for the Archbishop requires a good one before he will grant a license; but, if any present intend eloping, remember that there is no Gretna Green in these up-to-date days."

She has been a brilliant and conspicuous figure in society for the last two seasons, and the other day she slipped around in the quiet dusk to tell me that she was going to be married.

"After all," she said, with something that was between a laugh and a sob, "after all, I am not making what the world calls a brilliant match. I am marrying a man who has his fortune still to make, and the most I can say for mother is that she is reconciled. She isn't jubilant like she was when Sallie married Colonel Croesus, or when Mary married Jack Bonton. Poor mother! I am awfully sorry for her, and it almost broke my heart to disappoint her so, but what was I to do? There was Jim, and we were in love with each other, and bread and cheese and kisses seemed better to me with him than truffles and champagne with anybody else. But you haven't any idea what I went through with trying to make mother see it in any other light than a case of premeditated suicide. I didn't blame her. It was just her love for me, and her mistaken idea of trying to save me from every hardship. I suppose it's inevitable, perhaps, that a time should come to us all when the luxuries of life outweigh its sentiments—kind of a you'll be romantic a little while, but you can be comfortable a long, long time feeling, eh? Only, you know, it hasn't come to me

yet, and we couldn't see things from the same point of view.

"Did you ever think," the girl went on, with her voice a little unsteady, "that sometimes mother love can be the cruellest thing in the world? It isn't often that it is a vulgar love of money for money's sake that makes a woman want to see her daughter marry a rich man. She wants to shield her from work, from privations, from worry and cares, and she forgets how many things money won't buy. If our mothers could have their way, they would put us in nice satin-lined boxes, and pat us on the head and say: 'There, there, dear, you are so nice and comfortable. You have everything a reasonable woman can want. Now, just keep still and be good. Oh, of course, you feel a bit smothered, and you want to get out and stretch your wings and take your part in life; but you will get over that feeling after a while, and if you went out in the world you might get hurt. Believe me, there is nothing like a satin-lined box for comfort, and thank heaven that it gave you a mother who didn't let you have your own way, but insisted on seeing that you were properly provided for.'

"Of course, I am not advocating a girl being left perfectly free and untrammelled in making her selection of a husband. Any mother is justified in doing anything she can to prevent a girl throwing herself away on a man who is idle, or dissipated, or worthless. Any girl with a grain of sense in her head knows that the man who has never supported himself isn't going to be able to support her, and that kind of grinding poverty would kill the most robust case of sentiment that ever lived. If a man won't keep from drink for his own self-respect and manhood, he isn't going to do it for any woman who ever lived, and the quicker she listens to reason and lets him go the better for her. That is the poverty and hard times that has no hope to gild its horizon, and no self-respect to make its presence endurable.

"But there is another kind," and the society girl's face grew rosy red, and soft and tender as a June rose, "where a man has youth and health and ability, and has already gotten a foothold in the world. He is still poor. Yes, with the best of luck, of hard work and self-denial, it will be many years before he will be able to afford his wife many luxuries; but a mother ought to think a long time, and be sure before she tries to keep her daughter from saying 'Yes' to him. Somehow, that always seems to me the great American romance, and I never see a prosperous, middle-aged American couple together, and note the man's fondness for his wife and his admiration for her, and his reliance on her judgment, without thinking that it is the flower and perfume of our hard-working, commercial life. They have worked together, and struggled together, and had the same ideals and interests, and hopes and plans, and have grown into a oneness that people never know who have only always been rich and prosperous.

"That was the way my mother and father married," said the girl, with a smile, "and I reminded mother of it in one of our arguments."

"And what did she say?" I inquired.

"She said I needn't think I could hope to marry such a man as my father is," returned the girl. "And then I knew that she was romantic still."

Kerosene for Ants.

TO THE EDITOR:—In answer to the question about keeping ants out of the pantry: I use kerosene. I take a brush, such as is used for varnishing, and go all around the windowsills and shelves and the edge of the floor with kerosene. For tables that food is kept on, I wet a string with kerosene and tie around the legs, also around the sugar can. I find it effectual, and have used it for years.

C. L. BLOOD.

Tommy (who has just had a scolding): "Father, don't you wish we had never married mother?"

All on Account of Mousie.

"Oh, dear!" said Mamma Mouse. "My foot is very lame. I suppose I am old enough to know a trap when I see it, but there seems to be no end to the kinds of traps. I cannot go out marketing to-day, and I am very hungry."

Now little Brother Mouse was sitting in a corner, playing with a grain of wheat which had been left from his breakfast, but when he heard his mother speak, he ate the wheat quickly and ran to her side.

"Oh, let me go to market, mother!" he cried.

"I am quite sure that I could do everything very well indeed. I will be careful about traps. I will not go into anything, and you know that I know a cat as well as you do yourself. So, please, mother, let me go!"

Mother Mouse hesitated. She loved little Brother Mouse tenderly. The cat had devoured all her other children; he alone remained to cheer her. But she was hungry and lame, and there did not seem to be a very bright prospect for days ahead. So she said wisely:

"Well, then, listen to me. Our front door opens into a large classroom of a big school. I have always taken you out of the back door for your airings, so this way will be new to you. Go very cautiously to the door, look about; and, if everything is quiet, then you may know that it is recess time. After making very sure, you may creep out and look around. I often find bits of bread and cheese on the floor. There is a basket, too, under a big desk; and in that you may find apple cores and other rare treats. Go, now, my dear, if all is well. Eat all that you can yourself, and bring home enough for dinner."

Little Brother Mouse whisked his tail merrily, promised everything that his mother asked him, and darted off to the front door of his home. When he reached it, he stood still and peered out. The large schoolroom was flooded with sunlight, and the twenty boys and girls who sat at their desks were as still as a mouse cold desire. The teacher was reading in a book, and the large clock was ticking loudly. And, best of all, right under the teacher's desk was a bit of yellow cheese; and beside it stood the large basket, which contained the possibility of a rarer treat.

Now Little Brother Mouse had always had a faint idea that "recess" meant "play-time." Surely, all these boys and girls were not playing, or if they were, it was a very queer game. However, Mother Mouse had said if it were perfectly still; and she probably knew about what she was saying. So, with a very brave heart, little Brother darted across the floor toward that tempting bit of cheese. He had barely reached it when such a shriek rent the air that his blood ran cold.

Mollie Day and seen him over the top of her book, and Mollie was a famous screamer. Poor mouse made for his hole, and Mollie shrieked again. Instantly twenty boys and girls followed Mollie's lead, and leaped upon their desks.

The teacher, with superhuman strength of character, subdued her desire to spring on her own desk, and said calmly:

"Now, children, be brave and self contained. When I ring the bell, go quietly from the room. Remember—"

She got no further; for the pupils, headed by Mollie, were running and screaming through the door.

The principal, in his quiet office, heard the uproar, and, stepping quickly to the bell, gave the alarm that was used in case of fire. For no lesser evil entered his mind.

The well-drilled pupils all over the building rose quietly, and passed from their classrooms. But, at the head of the lower flight of stairs, the screams of the first twenty unnerved them; and there was a desperate rush for the outer doors.

An old gentleman, who was passing by, gave one glance at the emerging mass, and, running into a drug store, started an alarm for fire engines, ambulances and messenger boys. A few

minutes later the street in front of the school was a scene of wildest confusion. Three engines, two ambulances and mothers and fathers by the score wildly looking for their children.

The chief of the fire department entered the building, followed by his men. They picked up some children who had been knocked down, and searched for the fire. But there was no fire; and strange to say not a child was seriously hurt but Mollie Day. She was lying in a limp, little heap at the foot of the stairs, moaning feebly.

One of the ambulance doctors was her Uncle Ned; and, when he recognized his little niece, he gathered her up in his arms, and carried her to his own hospital, and from there sent for her mamma.

Upon examination the doctors found that Mollie's left leg was badly fractured, and the operation of setting the bone was exceedingly painful. Mollie bore the suffering with such unflinching courage that Uncle Ned's heart was filled with admiration.

Later in the day, when his duties were over, he went to her bedside and sat down to tell her how proud he was of her.

He had the afternoon paper in his hand, and Mollie gazed at it very seriously.

"What does the paper say about the accident, Uncle Ned?" she asked, her little pain-filled face flushing slightly.

"Why, they say no cause for the panic can be found: it was a most mysterious thing."

"Was any one hurt beside me?" This question was asked very softly.

Uncle Ned bent and kissed the sweet face.

"No one seriously, dear. Some were bruised and shaken up. You were the only real sufferer, my brave little girl. I tell you what, Mollie, if they all had your nerve, no such panic would have occurred. The doctors are still speaking of your cool courage. I'm tremendously proud of you!"

"Oh, don't, Uncle Ned!" and Mollie burst out crying. "I'm just the very biggest coward of them all. I started that panic!"

Uncle Ned put his finger on her pulse, but there was no fever.

"You will never, never tell if I tell you something?"

Her uncle bent closer.

"Since no one else is hurt, it will not matter; and, O, Uncle Ned, it is such a shameful secret!"

"I promise, Mollie girl."

"Well, then," Mollie's voice fell to a whisper.

"I saw a little mouse; it was awfully little, Uncle Ned. It ran across the floor. I screamed and jumped upon my desk, and—then things happened."

For a moment Uncle Ned battled to keep down his laugh. Then his eyes grew serious. But, late that night, when he was quite alone, he had to give

way; and he laughed long and merrily. Then he said just before he fell asleep, "Why are they made that way?"

And, in the little mouse's home, little Brother was saying, between his shivering spells,—for he had not as yet gotten over his fright:

"But, mother, why did she scream? I did not bite her. I was nowhere near her."

"Don't be so silly!" replied his mother, crossly; for she was very hungry. "When you are older, you will know better than to ask that question. There is no answer to it. Girls are made that way."—Christian Register.

DOMESTIC ECONOMY.

Domestic Hints.

DELICIOUS SPONGE CAKE.—One pound of granulated sugar, one-half pound of sifted flour, ten eggs, the grated peel and half the juice of a large lemon. Beat the yolks of the eggs and sugar together until very light, add the lemon peel and juice, then the beaten whites of the eggs, and beat all well together. Now carefully fold in the flour, not beating or stirring. Bake in a moderate oven, lining and covering the pan with thick paper.

GRILLED ALMONDS.—Make ready a cup of blanched and dried almonds. To one cup of sugar add half a cup of water and boil for about ten minutes, then drop in the almonds and continue the boiling till the nuts turn a faint yellow; next remove quickly from the fire, and stir until the syrup reaches the sugary stage, clinging to the nuts. They are then spread to cool on a plate over which a piece of waxed paper has been laid. Serve the same as salted almonds.

PRESSED BEEF.—Buy a rib stew, or any of the less expensive cuts of beef. Prepare for boiling, and season with salt to taste, three whole cloves, and a large teaspoonful of vinegar to each four pounds of meat. Boil until thoroughly done. Remove all bones and skins, and chop fine, adding pepper to taste. Place in a stone vessel, and press with a heavy weight. When quite cold and firm the beef will slice easily. Serve cold, or dip thin slices in beaten egg and bread crumbs, and fry in hot lard.

STRAWBERRY SHORTCAKE.—Mix thoroughly one pint bread flour, half teaspoon salt, two level teaspoonfuls baking powder and one tablespoonful sugar, and rub in one-fourth cup butter. Beat one egg very light, add one scant cup milk (about seven-eighths) without mixing, and stir this into the flour. Beat well and then spread the dough on two round shallow pans. Bake, and when done split, butter and spread with fruit, sweetened and mashed.

A GREAT REMEDY.

Greatly Tested.

Greatly Recommended.

The loss of the hair is one of the most serious losses a woman can undergo. Beautiful hair gives many a woman a claim to beauty which would be utterly wanting if the locks were short and scanty. It is almost as serious a loss when the natural hue of the hair begins to fade, and the shining tresses of chestnut and auburn are changed to gray or to a faded shadow of their former brightness. Such a loss is no longer a necessity. There is one remedy which may well be called a great remedy by reason of its great success in stopping the falling of the hair, cleansing the scalp of dandruff, and restoring the lost color to gray or faded tresses. Dr. Ayer's Hair Vigor is a standard and reliable preparation, in use in thousands of homes, and recommended by everyone who has tested it and experienced the remarkable results that follow its use. It makes hair grow. It restores the original color to hair that has turned gray or faded out. It stops hair from falling, cleanses the scalp of dandruff, and gives the hair a thickness and gloss that no other preparation can produce.

Mrs. Herzmann, of 356 East 68th St., New York City, writes:

"A little more than a year ago, my hair began turning gray and falling out, and although I tried ever so many things to prevent a continuance of these conditions, I obtained no satisfaction until I tried Dr. Ayer's Hair Vigor. After using one bottle my hair was restored to its natural color, and ceased falling out."—MRS. HERZMANN, 356 East 68th St., New York City.

"I have sold Dr. Ayer's Hair Vigor for fifteen years, and I do not know of a case where it did not give entire satisfaction. I have been, and am now using it myself for dandruff and gray hair, and am thoroughly convinced that it is the best on the market. Nothing that I ever tried can touch it. It affords me great pleasure to recommend it to the public."—FRANK M. GROVE, Faunsdale, Ala.

There's more on this subject in Dr. Ayer's Curebook. A story of cures told by the cured. This book of 100 pages is sent free, on request, by the J. C. Ayer Co., Lowell, Mass.

S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, June 1, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | July. | Sept. |
|----------------|-----------------------|----------------------|
| Wednesday..... | \$1.09 1/2 @ 1.12 1/4 | \$.87 1/2 @ .88 1/2 |
| Thursday..... | 1.14 1/4 @ 1.09 1/4 | .88 1/2 @ .86 1/4 |
| Friday..... | 1.04 1/4 @ 1.04 1/4 | .86 1/4 @ .84 1/4 |
| Saturday..... | 1.06 @ 1.04 1/4 | .85 @ .83 1/4 |
| *Monday..... | 1.02 @ .95 | .82 @ .81 1/2 |
| *Tuesday..... | | |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | July. | Dec. |
|----------------|-------------|-------------|
| Wednesday..... | 10s 5 d | 7s 1 d |
| Thursday..... | 10s 6 d | 7s 0 1/2 d |
| Friday..... | 10s 5 1/2 d | 6s 11 1/2 d |
| Saturday..... | 10s 5 1/2 d | 6s 11 d |
| *Monday..... | | |
| *Tuesday..... | | |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | May. | Dec. |
|-----------------|-----------------|-----------------------|
| Thursday..... | \$1.50 @ | \$1.50 1/2 @ 1.47 1/4 |
| Friday..... | 1.49 1/4 @ 1.47 | 1.49 1/4 @ 1.47 |
| Saturday..... | 1.45 @ 1.46 1/4 | 1.45 @ 1.46 1/4 |
| *Monday..... | | |
| *Tuesday..... | | |
| *Wednesday..... | | |
| *Holiday..... | | |

Wheat.

Again lower figures have to be quoted for wheat, all reported conditions since last review having been against the selling interest. In Chicago there were some heavy breaks, particularly yesterday (Tuesday), May dropping from \$1.40 to \$1.25, and July declining from \$1.02 to 95c. To-day (Wednesday) operations in Chicago receded about 3c per bushel from yesterday's lowest figures. Foreign markets showed corresponding weakness. On the San Francisco Call Board December wheat dropped about 12 1/2c in price during the week, and depreciation in quotable values for spot wheat was about equally pronounced, although trading in the open market was so insignificant that prices were very poorly defined. Continued favorable crop prospects in most of the wheat growing countries, increase in the visible supply in the United States and an increase in the exports from Russia and India are prominent among the causes assigned for the depression.

The outward movement lately from this center, as was to have been expected, has been very light. Only four wheat cargoes cleared from this port during the entire month of May, and no two were for the same destination. Cape Town, South Africa; London, England; Callao, South America, and Cork, U. K., were the respective points for which the vessels cleared. About 15,000 tons were forwarded overland, however, via the Southern Pacific and New Orleans for Europe, this wheat being destined, it is stated, for France. This swells the total for the month to a little over 25,000 tons, with a valuation of fully \$50,000. For the season to June 1st shipments of wheat from San Francisco, exclusive of flour, aggregate 500,000 tons, representing a value of \$15,175,000. The quantity has not been exceeded by the exports in any previous season since 1892-93, and the value is greater than for corresponding period in any previous year since 1891. As there are at this writing only two ships on the engaged list here for wheat loading, the indications are the season's export trade in wheat will not be materially augmented by shipments from this port the current month. Both ships and wheat are lacking. Accounts of stocks of wheat and other cereals throughout the State are now being taken for the semi-annual statement, and the result of the same will be known in a week or ten days. There is little or no doubt that the stocks on hand will prove the lightest on record for a long time. A year ago new wheat had begun to come forward from a few warm localities in the lower San Joaquin. The season this year is, however, unusually backward, and no new wheat of consequence is expected for a month to come.

California Milling.....\$1.65 @ 1.70
Cal. No. 1 shipping, alongside.....1.47 1/4 @ 1.50
Oregon Valley.....1.47 1/4 @ 1.50
Walla Walla Blue Stem.....1.55 @ 1.65
Walla Walla Club.....1.45 @ 1.50

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 white wheat per cental for the week were as follows for the options named:
May, 1898, delivery, \$1.63 1/2 @ 1.50.
December, 1898, delivery, \$1.50 1/2 @ 1.39 1/2.
Wednesday, at regular noon session of Call Board, May wheat sold at \$— @ —;
December, 1898, \$1.41 1/4 @ 1.39 1/2.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|-------------------|-----------------|
| Liv. quotations..... | 65 1/2 @ 65 1/2 | 95 1/2 @ 95 1/2 |
| Freight rates..... | 20 @ 21 1/4 | 27 1/4 @ 30 1/4 |
| Local market..... | \$1.25 @ 1.32 1/4 | \$1.50 @ 1.55 |

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

Flour.

Market is weak and lower, in consequence of the recent depression in wheat values. An official announcement was made by the local mills of a reduction in price of 25c per barrel. Had official card rates been reduced 50c per barrel, it would have been more in keeping with the decline in wheat, and also more in accord with the actual prices at which close cash buyers are now able to secure flour.

| | |
|--------------------------------|---------------|
| Superfine, lower grades..... | \$3.75 @ 4.00 |
| Superfine, good to choice..... | 4.00 @ 4.25 |
| Country grades, extras..... | 5.25 @ 5.50 |

| | |
|---------------------------------|-------------|
| Choice and extra choice..... | 5.50 @ 5.65 |
| Fancy brands, jobbing..... | 5.75 @ 5.90 |
| Oregon, Bakers' extra..... | 5.25 @ 5.50 |
| Walla Walla, Bakers' extra..... | 5.25 @ 5.50 |

Barley.

While some rather very hard raps were administered to barley values during the past week, particularly in the speculative arena, where most of the trading was done, the fluctuation was decidedly less marked than immediately prior to last review. Values for this cereal are still on a tolerably high plane, as compared with prices prevailing for oats and corn, but barley is in much lighter supply than either of the other two grains named, and for this reason it is but natural that it should for the time being command relatively the best figures. Most of the barley now offering is from Oregon and Washington, consignments from these States having been attracted this way by the rather high prices established here a few months ago. It is doubtful if much barley is landed here from outside points in the near future, unless values recover materially from existing levels. Fair feed sold down to \$1.17 1/2, and for the best feed \$1.25 was an extreme difficult to obtain, being above the views of nearly all buyers. Brewing grades received so little attention that quotations for the same were difficult to name with any degree of accuracy. Judging from the inactivity experienced for weeks past in brewing barley, one would almost imagine that brewers had found some substitute for this grain.

| | |
|---------------------------------|-----------------|
| Feed, No. 1 to choice..... | 1.20 @ 1.22 1/4 |
| Feed, fair to good..... | 1.17 1/2 @ 1.20 |
| Brewing, No. 1 to choice..... | 1.30 @ 1.35 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

| |
|---|
| May, 1898, delivery, \$1.27 1/2 @ 1.26. |
| December, 1898, delivery, \$1.20 @ 1.14. |
| Wednesday, at regular noon session of the Call Board May, 1898, feed sold at \$— @ —; Dec., 1898, \$1.15 1/2 @ 1.14. |

Oats.

Values have been trending against the selling interest, especially for the higher grades, these being in less active request than the more common sorts, the latter being used largely in place of barley. Oats are not coming forward as freely as they did earlier in the season, but there is no scarcity of spot supplies. It is stated on good authority that there are considerable quantities of oats still remaining in Oregon and Washington, but, with no more inducements than at present, it is doubtful if many come forward to this market during the balance of the current season.

| | |
|-------------------------------|---------------------|
| White Oats, fancy feed..... | 1.37 1/4 @ |
| White, good to choice..... | 1.30 @ 1.35 |
| White, poor to fair..... | 1.27 1/4 @ |
| Gray, common to choice..... | 1.27 1/4 @ 1.32 1/4 |
| Milling..... | 1.32 1/4 @ 1.37 1/4 |
| Surprise, good to choice..... | 1.35 @ 1.40 |
| Black Russian..... | — @ — |
| Red..... | — @ — |

Corn.

Importations from the East have about ceased for the time being, values now current here failing to warrant bringing out corn at the recent advance in freight rates. Considerable of the Eastern brought in here at low freights is still on hand, and some of the same is being offered at about as reasonable rates as have been current this season. The home product has been lately arriving more freely, and holders are not so stiff in their views of values as they were a few weeks ago.

| | |
|----------------------------------|-----------------|
| Large White, good to choice..... | 1.10 @ 1.15 |
| Large Yellow..... | 1.10 @ 1.15 |
| Small Yellow..... | 1.30 @ 1.35 |
| Eastern Yellow..... | 1.05 @ 1.12 1/4 |
| Egyptian White..... | — @ — |
| Popcorn, shelled, 1 lb..... | — @ — |

Rye.

While there is not much offering, there is more than enough for the immediate demand, and market lacks firmness.

| | |
|--------------------------|-----------------|
| Good to choice, new..... | 1.32 1/4 @ 1.35 |
|--------------------------|-----------------|

Buckwheat.

There have been no recent transactions reported. Owing to the prevailing activity, values are poorly defined.

| | |
|---------------------|-------------|
| Good to choice..... | 1.80 @ 1.85 |
| Silverskin..... | — @ — |

Beans.

This market has ruled quiet since last review, but there has been no perceptible weakening in the views of holders, quotable values continuing on practically the same plane as last noted. Free purchases would not have been possible at other than full figures below given, or probably a little more. If selling pressure had been exerted, however, concessions to buyers would have been necessary. There is nothing at present to warrant anticipating any radical advances or declines in values from the levels now existing. Market for the time being seems to be a little firmer for colored than for white varieties.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1.85 @ 2.10 |
| Small White, good to choice..... | 1.90 @ 2.15 |
| Lady Washington..... | 1.90 @ 2.10 |
| Butter, small..... | 1.60 @ 1.75 |
| Butter, large..... | 1.75 @ 1.90 |
| Pinks..... | 2.65 @ 2.75 |
| Bayos, good to choice..... | 2.90 @ 3.10 |
| Reds..... | 2.75 @ 3.00 |
| Red Kidneys..... | 2.90 @ 3.00 |
| Limas, good to choice..... | 3.00 @ 3.10 |
| Black-eye Beans..... | 3.30 @ 3.50 |
| Horse Beans..... | 1.30 @ 1.40 |
| Garbanzos, large..... | 2.75 @ 3.00 |
| Garbanzos, small..... | 1.60 @ 1.75 |

The bean market on the Atlantic side is reported as follows, according to a New York authority, the advices being furnished by recent mail. Prices quoted are per 60-lb. bushel:

Demand for some varieties of domestic beans has shown a little improvement this week, but the movement has not been large enough to materially effect the market, and the changes in value are only slight. Firmer advices have come from the

interior of this State, and from producing and distributing points in the West, and quite a good deal of stock has been withdrawn from sale. Against this, however, has been the enforcement of the new rules of the transportation lines which require the removal of all kinds of stock from the receiving depots within four days after arrival. In some cases goods have been offered 2 1/2c less than the general market rather than put them in store. The business of late has been very largely with home jobbing trade. The Government has not called for further lots, and very few exporters are operating. Marrow have ruled at \$1.72 1/2 @ 1.75, most of the week, and the outside figure is now generally asked. Medium are selling at \$1.40 @ 1.42 1/2, very rarely higher. Pea have stiffened a little and most of the late business has been at \$1.40, occasional lots going at \$1.37 1/2. It seems probable that car lots of choice barrels could be placed at the latter price. The few sales of choice Red Kidney have been at \$2.05 @ 2.10; the latter is the export figure. Occasional lots of good quality but too soft to carry safely into warm weather have sold below \$2. White Kidney and Turtle Soup seldom inquired for. Yellow Eye have but few sales. About 4070 bags California Lima have been returned this week from England; this has caused further weakness and good size lots on the dock have been offering at \$2.05; jobbing sales at \$2.10 @ 2.15. Green peas in very light demand.

Dried Peas.

Recent transfers of green dried from Humboldt have been made at top figures quoted. There are so few Niles offering at present that little more than nominal quotations for the same can be given.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1.90 @ 2.00 |
| Niles Peas..... | 1.65 @ 1.75 |

Wool.

There is no improvement observable, the market in this center remaining lifeless, with values still undetermined for spring wools of this season's shearing. A little business is reported in Eastern centers, mainly in wools suitable for army and navy cloths and Government blankets. Pacific coast mills have so far declined to bid on Government contracts, fearing that they would be unable to compete successfully with Eastern concerns. Holders are still hopeful of a revival of trade before very long, and are patiently awaiting the turn for the better.

SPRING.

| | |
|-----------------------------------|---------|
| Oregon Eastern, choice..... | 12 @ 14 |
| Oregon Eastern, fair to good..... | 9 @ 11 |

FALL.

| | |
|------------------------|---------|
| Northern, free..... | 10 @ 12 |
| Southern Mountain..... | 9 @ 11 |

Hops.

Although there are not many hops now offering here, the market is devoid of firmness, the positive demand being so insignificant, either on local account or for shipment, as to be not worth mentioning. Prospects are not encouraging for the revival of activity during the balance of the season, dealers and brewers being reported to have, almost without exception, enough hops to tide them over until next fall, or until new crop becomes available.

Good to choice, 1897 crop.....10 @ 13
Mail advices of a late date from New York furnish the following concerning the hop market:

If there is any change in the market this week it is toward a little steeper feeling, particularly on the more desirable grades of hops. The demand has not enlarged much, but there has seemed to be a trifle more doing with brewers, and as remaining stocks at all points are very moderate, holders have taken a rather more hopeful view of the situation. Repeated inquiries have come from London, both by mail and cable, but these have not resulted in much business. So far as indicated by the few sales making there does not seem to be any occasion for altering former quotations. A really choice article when wanted brings our top figures, but the bulk of the stock is offering in range of 10 @ 14 for State, and 8 @ 12 for Pacific coast. In the interior of this State some sales are reported at 9 @ 11 1/4, with reports of 12c bid for one or two fine growths. The condition of the yards has greatly improved under better weather. We hear of no complaints of winter killing. In Washington the vines look remarkably fine. Complaints of numerous missing hills come from Oregon. It is uncertain how much benefit the crop in California will derive from the recent rain.

Hay and Straw.

The market for hay has developed no particularly noteworthy features since former review, the general condition and quotable values continuing much as then noted. Arrivals lately have not been heavy, but have proven more than ample, as buyers in most instances have taken hold slowly, refusing to purchase beyond immediate needs, having no faith in current values being very long maintained.

NEW HAY.

| | |
|--------------|---------------|
| Wheat..... | 17.00 @ 21.00 |
| Barley..... | 15.00 @ 16.00 |
| Oat..... | 15.00 @ 16.00 |
| Alfalfa..... | 12.00 @ 13.00 |

OLD HAY.

| | |
|----------------------|---------------|
| Wheat..... | 19.00 @ 23.50 |
| Wheat and Oat..... | 18.00 @ 22.00 |
| Oat..... | 17.00 @ 19.00 |
| Barley..... | — @ — |
| Timothy..... | 15.00 @ 18.00 |
| Compressed..... | 19.00 @ 23.00 |
| Straw, 1/2 bale..... | 75 @ 1.00 |

Millstuffs.

Brans and Middlings have been offered at reduced figures and have not moved readily at the decline. The tendency on Rolled Barley and Milled Corn was to easier prices than have been lately current on these descriptions.

| | | | |
|---------------------|----|-------|----|
| Brans, 1/2 ton..... | 14 | 50@15 | 50 |
| Middlings..... | 16 | 50@18 | 00 |
| Barley, Rolled..... | 26 | 00@26 | 50 |
| Cornmeal..... | 24 | 00@24 | 50 |
| Cracked Corn..... | 25 | 00@25 | 50 |

Seeds.

Market is virtually bare of Mustard Seed. Present quotations are based on values obtainable in a small jobbing way. Flax Seed is in too light stock to admit of much business being done. Alfalfa is not meeting with inquiry, and is not likely to be in demand before next winter, or until after heavy rains of the fall season. Bird Seed is offering at gen-

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erally unchanged rates, with business in the same of only moderate volume.

| | |
|----------------------------|-------------|
| Mustard, Yellow..... | 3.75 @ 4.00 |
| Mustard, Trieste Seed..... | 4.00 @ 4.25 |
| Mustard, Wild Brown..... | 2.75 @ 3.25 |
| Flax..... | 2.25 @ 2.40 |
| Canary..... | 2.40 @ 2.50 |
| Rape..... | 2.40 @ 2.50 |
| Hemp..... | 2.40 @ 2.50 |
| Alfalfa, Utah..... | — @ — |

Bags and Bagging.

Grain Bags are offering at low figures, and prospects are market will continue favorable to buyers throughout the season. Wool Sacks are in fairly liberal supply, with market easy in tone, demand being light. In quotable values for other bags and bagging there are no changes to record.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, 22x36, spot..... | 5 @ 5 1/4 |
| State Prison bags, per 100..... | 4.85 @ |
| Wool sacks, 4 lb..... | 30 @ |
| Wool sacks, 3 1/2 lb..... | 27 @ |
| Gunnies..... | 9 1/4 @ 10 |
| Bean bags..... | 4 1/4 @ 4 1/2 |
| Fruit sacks, cotton..... | 5 1/4 @ 6 |

Hides, Pelts and Tallow.

Hide market is firm for Wet Salted at the advanced quotations. Dry Flint Hides, Kip and Calf remain as last quoted. Horse Hides are slightly lower. Tallow is somewhat firmer, but is not quotably higher. Deer-skins are meeting with ready sale at figures quoted.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side hands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|-------------|
| Heavy Steers, over 56 lbs..... | 10 @ 10 1/4 | 9 @ 9 1/4 |
| Medium Steers, 48 to 56 lbs..... | 9 @ 9 1/4 | 8 @ 8 1/4 |
| Light Steers, under 48 lbs..... | — @ — | — @ — |
| Heavy Cow Hides, over 50 lbs..... | 9 @ 9 1/4 | 8 @ 8 1/4 |
| Light Cow Hides, under 50 lbs..... | — @ — | — @ — |
| Wet Salted Kip..... | — @ 9 1/4 | — @ 8 1/4 |
| Wet Salted Veal..... | — @ 9 | — @ 9 |
| Wet Salted Calf..... | — @ 10 | — @ 9 |
| Dry Hides..... | — @ 16 1/2 | 13 @ 13 1/4 |
| Dry Kip and Veal, 11 to 16 lbs..... | 15 @ 16 | — @ 12 |
| Dry Calf, under 4 lbs..... | 18 @ 20 | 15 @ 17 |
| Horse Hides, large..... | 2.00 @ 2.50 | — @ 2.00 |
| Horse Hides, medium..... | 1.50 @ 2.00 | — @ 1.50 |
| Horse Hides, small..... | 25 @ 30 | — @ 25 |
| Colts' Hides..... | 25 @ 30 | — @ 25 |
| Pelts, long wool, per skin..... | 90 @ 1.15 | — @ 90 |
| Pelts, medium, per skin..... | 70 @ 90 | — @ 70 |
| Pelts, short wool, per skin..... | 40 @ 60 | — @ 40 |
| Pelts, shearing, per skin..... | 15 @ 30 | — @ 15 |
| Deer Skins, best summer..... | 25 @ 30 | — @ 25 |
| Deer Skins, good medium..... | — @ 30 | — @ 30 |
| Deer Skins, thin winter..... | 12 @ 15 | — @ 12 |
| Elk Hides..... | 10 @ 12 | — @ 10 |
| Tallow, good quality..... | 3 @ 3 1/4 | — @ 3 |
| Tallow, No. 2..... | 2 @ 2 1/4 | — @ 2 |
| Goat Skins, perfect..... | 30 @ 37 1/2 | — @ 30 |
| Goat Skins, damaged..... | 10 @ 20 | — @ 10 |
| Kid Skins..... | 5 @ 10 | — @ 5 |

Honey.

Market is lightly stocked and in all probability will remain so throughout the season now opening, as very little honey will be produced in this State the current year. Supplies now offering are principally Comb. Values for both Comb and Extracted are being well sustained at the prevailing rates.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 5 1/2 @ 6 |
| Extracted, Light Amber..... | 4 1/2 @ 5 1/4 |
| White Comb, 1-lb frames..... | 8 1/4 @ 10 |
| Amber Comb..... | 6 1/4 @ 7 1/4 |

Beeswax.

With no active inquiry from any quarter, the market is easy in tone, despite the light stocks here and in the interior.

| | |
|---------------------------|---------|
| Fair to choice, 1 lb..... | 23 @ 25 |
|---------------------------|---------|

Live Stock and Meats.

Beef is ruling steady, with demand fair for best qualities and offerings not excessive. Mutton commanded about as good figures as preceding week, with less disposition than a few weeks ago to crowd stock to sale. Hogs in good condition did not lack for custom at prevailing figures, there being a good demand on packing account, medium size receiving the preference.

| | |
|---|---------------|
| Beef, 1st quality, dressed, net 1/2 lb..... | 6 @ 6 1/4 |
| Beef, 2d quality..... | 5 @ 5 1/4 |
| Beef, 3d quality..... | 4 @ 5 |
| Mutton—ewes, 7 @ 7 1/4; wethers..... | 7 1/4 @ 8 |
| Hogs, hard grain fed, medium..... | 4 1/4 @ 4 1/2 |
| Hogs, small..... | 4 @ 4 1/2 |
| Hogs, large hard..... | 4 @ 4 1/2 |
| Hogs, feeders..... | 3 1/4 @ — |
| Hogs, soft..... | 2 1/4 @ 2 1/2 |
| Hogs, stock..... | 2 @ — |
| Hogs, country dressed..... | 4 1/2 @ 5 |
| Veal, small, 1/2 lb..... | 6 @ 7 |
| Veal, large, 1/2 lb..... | 5 @ 6 |
| Lamb, Spring, 1/2 lb..... | 8 @ — |

Poultry.

There was not such a surfeit of old chickens as during previous week, and market was in consequence less demoralized. Other old poultry, however, continued to sell at a very low range of values, and even then did not move readily. Choice young stock was not plentiful and met with prompt custom at

moderately stiff prices. Big young roosters without sign of spur were especially salable to advantage, some going at an advance of fully \$1 on top figures quoted.

Turkeys, live hens, lb. 11 @ 12
Turkeys, live gobblers 11 @ 12
Hens, Cal., 3 doz. 3 50@5 00
Roosters, old, 3 doz. 3 50@4 00
Roosters, young, (full-grown) 7 00@8 50
Fryers 5 00@5 50
Broilers, large 4 00@4 50
Broilers, small 2 00@3 00
Ducks, young, 3 doz. 3 00@4 50
Ducks, old, 3 doz. 3 00@3 25
Geese, pair 75@1 00
Goslings, 3 pair 1 00@1 25
Pigeons, Old, 3 doz. 1 00@—
Pigeons, Young 1 25@1 50

Butter.

For desirable qualities of both creamery and dairy product the market has ruled fairly steady, values continuing at a narrow range. Tendency on defective qualities was to lower figures, stocks of this sort being on the increase. Some of the fresh butter arriving is showing the effects of poor feed, and on this account drags at reduced rates, being out of favor with consumers. Stocks of packed are on the increase, but values are being sustained.

Creamery extras, lb. 20 @—
Creamery firsts 19 @19 1/4
Creamery seconds 19 @—
Dairy select 19 @19 1/4
Dairy seconds 18 @—
Dairy, soft and weedy 18 @—
Mixed store 16 @17
Creamery in tubs 19 @22
Firkin, Cal., choice to select 19 @21
Firkin, common to fair 17 @18

Cheese.

There is an easy tone to the market, with supplies fairly liberal for this time of year, and buyers not disposed to take hold freely at full current rates. This is particularly the case with brands not having an established and high reputation. A few favorite marks are commanding in a small way an advance on quotable rates.

California fancy flat, new 9 1/4 @—
California, good to choice 8 1/4 @ 9 1/4
California, fair to good 8 @ 8 1/4
California Cheddar 10 @11
California, "Young Americas" 10 @11

Eggs.

Owing to the weather having been in the main cool and favorable the past week for the forwarding of eggs from interior points, arrivals have as a rule shown good average condition, causing buyers to run more on store-gathered stock and ordinary ranch, these being regarded cheaper at the lower figure than fancy brands direct from benneries, and which were held at top prices. A little hot weather, however, and poor eggs in consequence, would speedily change the conditions, causing buyers to seek guaranteed brands and pay a premium for same. Eastern were not in large receipt, owing to a relatively better market on the Atlantic side.

California, select, large white and fresh 16 1/4 @—
California, select, irregular color & size 14 1/4 @15 1/4
California, good to choice store 14 @15
Eastern, as to section and grading 14 @15

Vegetables.

Most kinds of spring vegetables were in increased supply and did not sell to quite as good advantage as previous week, but in a few instances better average figures were realized, notably in the case of Onions, which were in less excessive stock. Asparagus, Peas and Beans were favored with a good demand at the current rates.

Asparagus, No. 1 to choice, 3 box. 1 50@2 25
Asparagus, common to fair, 3 box. 75@1 25
Beans, String, lb. 7 @ 8
Beans, Lima, lb. — @—
Beans, Refuge, lb. — @—
Beans, Wax, lb. 6 @ 7
Cabbage, choice garden, 3 100 60@70
Cauliflower, 3 doz. 50@—
Corn, Green, 3 sack. — @—
Corn, Alameda, 3 crate. — @—
Cucumbers, 3 box. 65@1 00
Egg Plant, lb. — @—
Garlic, lb. 3 @ 5
Mushrooms, Buttons, lb. — @—
Mushrooms, Wild, lb. — @—
Okra, Dried, lb. — @—
Onions, Yellow, good to choice — @—
Onions, New Red 50@75
Peas, Sweet, Garden, lb. 2 @ 2 1/4
Peas, Sweet, sack. 1 00@1 25
Peppers, Green Chile, lb. 15 @ 20
Rhubarb, ordinary, 3 box 50@60
Rhubarb, Mammoth, lb. 75@85
Squash, Summer, 3 box 1 00@1 25
Tomatoes, 3 box or crate 1 75@2 25

Potatoes.

Market has been unsettled and lower, heavy receipts of new potatoes in boxes having had a depressing effect on values. Arrivals from Sacramento river are now aggregating 6000 to 8000 boxes per week. Old Burbanks were in tolerably free receipt from Oregon. Demand for Old was confined wholly to choice.

Burbanks, River, sack. — @—
Burbanks, Petaluma and Tomales, cti 60@70
Burbanks, Humboldt, cti 60@85
Burbanks, Oregon, cental. 60@85
Garnet Chile, Oregon, cti — @—
New Potatoes, in sacks, cti 75@1 25
New Potatoes, River, in boxes, cental 75@1 25
Sweet River, cental. — @—
Sweet Merced — @—

The Fruit Market.

Fresh Fruits.

While the display of Spring and early Summer fruits, from trees and vines, has been surpassed both in quantity and quality in some former seasons, the showing is decidedly better than there was reason to anticipate from the reports circulated several months ago of damage to the crop through severe frosts and prolonged dry weather. Apples of 1898 crop have begun to put in an appearance, but offerings so far, as is invariably the case with first arrivals of this fruit, are too small and green to be desirable or to be particularly sought after. Early Plums—Cherry and Clyman—have been on market for nearly a week, but they have failed to command fancy figures, other fruit proving equally or more de-

sirable to consumers and interfering with the advantageous sale of the plums now coming forward. Apricots are not arriving freely, and it is the exception where the quality is all that could be desired. Such as are choice to select do not fail to meet with prompt custom and to command good figures. Cherries were in increased receipt and lower, especially for offerings in bulk, which had to depend on canners for an outlet. Blackberries were in fair supply for this early date, as were also Raspberries, both selling at about same prices as established the previous week. Gooseberries went at rather low figures, being in tolerably heavy supply, with inquiry not very brisk. Strawberries averaged a little higher than immediately prior to our last review, with demand fairly active for best qualities.

Apricots, Pringle, 3 box. 30@ 50
Apricots, Royal, 3 box. 65@ 75
Apples, green, 3 box. 40@ 50
Cherries Black, in bulk, lb. 2 @ 4
Cherries White, in bulk, lb. 1 @ 2
Cherries, Black, fair to choice, 3 box. 35@ 50
Cherries, White and Red, 3 box. 20@ 30
Blackberries, 3 crate. 1 00@1 25
Raspberries, 3 crate. 1 00@1 25
Gooseberries, lb. 1 @ 2
Gooseberries, English, lb. 4 @—
Strawberries, Longworth, 3 chest. 5 00@7 00
Strawberries, Large, 3 chest. 3 00@4 00
Plums, Clyman, 3 box. 50@ 75
Plums, Cherry, 3 drawer. 25@ 35

Dried Fruits.

In the market for cured and evaporated fruits much the same general conditions prevail as noted in previous issue. While there is no special activity observable, the volume of trade is about all that could be expected, when the light stocks of desirable qualities of most varieties are taken into consideration. Prunes constitute the bulk of present supplies, and it is estimated there are not to exceed seventy-five carloads of this fruit remaining in the State. Values for Prunes are being well sustained at previous range. Peaches are being a little more firmly held, especially peeled and choice to select unpeeled, with supplies showing steady decrease. Apricots are nearly out of stock, but new are expected on market the current month, and there is reason to believe good prices will be realized for the output of this fruit this season. Pears are scarce, there being virtually none other than a few ordinary quartered now remaining. Nectarines are nearly all gone, and White are ruling higher. Pitted Plums are being held at a moderate advance on rates recently quoted. Ordinary sun-dried Figs are in reduced stock, and are no longer obtainable at the inside and decidedly low figures lately current.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, per lb. 6 @ 7
Apricots, Royal, fancy 7 1/4 @ 8 1/4
Apricots, Moorpark 8 @10
Apples, in boxes 6 1/2 @ 7
Figs, fancy pressed 8 @10
Nectarines, White 4 1/2 @—
Nectarines, Red 3 1/2 @ 4
Peaches, unpeeled, choice 4 1/2 @ 5
Peaches, unpeeled, fancy 6 @ 6 1/2
Peaches, peeled, in boxes 10 @12 1/2
Pears, unpeeled Bartlett's, halved, fancy — @—
Pears, halved, unpeeled Bartlett's — @—
Pears, quartered, unpeeled Bartlett's 4 @ 5
Pears, peeled and sliced — @—
Plums, pitted 5 @ 6
Prunes, in sacks, 40-50's 5 1/2 @ 6
50-60's 4 1/4 @ 4 1/2
60-70's 3 1/4 @ 3 1/2
70-80's 3 @ 3 1/4
80-90's 2 1/2 @ 3
90-100's 2 @ 2 1/2
Above figures are on basis of 3 1/4 @ 3 1/4 for 4 sizes. Prunes in boxes, 1/2 c higher for 25-lb boxes, 1/4 c higher for 50-lb boxes.

4 sizes Santa Clara and equal 3 1/4 @—
4 sizes San Joaquin and Northern 3 @—
Prunes, Silver 4 @ 7

COMMON SUN-DRIED.

Apricots, ordinary 5 @ 6
Apples, sliced 4 @ 4 1/2
Apples, quartered 1 1/2 @—
Figs, Black 3 @ 3 1/4
Figs, White 3 @ 4
Peaches, unpeeled 3 1/4 @ 4
Plums, unpeeled 1 @ 1 1/4

A New York authority gives the following review of the dried fruit market East, the report coming through by recent mail:

Evaporated apples are scarce, and with a steady demand, mainly for export, market has continued very firm. Prime wire-dried might be found at 9c, but it is low, and wood-dried are generally held at 9 1/2c, with choice to fancy higher. Sun-dried apples are also in light supply and held with confidence when showing attractive quality. Chops and waste are in few hands and higher—choice lots generally being held above outside quotations, though demand is quiet, and stock could be laid down here from the interior, close to inside figures. Raspberries have had more attention and rule quite firm, but other small fruits quiet though held steadily. California apricots firm and higher, with finest stock generally held 1/2c above outside quotations. California peaches quiet and unchanged, and very little doing in pears, but apricots are more active and firm at the advance quoted.

Apricots, Cal. Moorpark, 1897, per lb. 10 @12 1/2
Apricots, Cal. Royal, 1897, per lb. 8 @ 9
Peaches, Cal., 1897, peeled, per lb. 10 @16
Peaches, Cal., 1897, unpeeled, per lb. 5 @ 9
Pears, Cal., 1897, per lb. 5 @10
Prunes, Cal., 1897, per lb. 4 @ 8 1/2

Raisins.

Common qualities are still being offered freely, especially rain-damaged stock, and for such the market is fully as favorable to buyers as at any previous date this season. Good to choice raisins are not plentiful, market for the same being firm at the prevailing rates.

F. O. B. FRESNO DELIVERY.

Imperial Clusters, per box. — @—
Dehesa Clusters, per box. — @—
Fancy Clusters, per box. — @—
Boxes, London layers, 20-lb box. 1 00@—
(Usual advance for fractions.)
Loose Muscatel, 4-crown, lb. 3 1/4 @—
Loose Muscatel, 3-crown 2 1/4 @2 1/2
Loose Muscatel, 2-crown 1 1/2 @2
Sultanas 3 @3 1/4
Seedless Muscatel 1 1/2 @2
Dried Grapes 1 @1 1/4

Citrus Fruits.

Oranges are still on market in quotable quantity, but the season is well advanced, and strictly choice to select qualities are the

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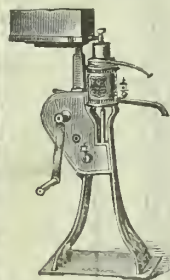
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San Francisco, Cal.

CAPITAL \$1,000,000
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No Trouble, No Repairs, in Four Years

WITH THE

Improved U. S. Separator

SANTA ROSA, CAL., June 27, 1897.
This makes the fourth year I have used your No. 5 Cream Separator, and it runs just as well as ever, and does just as good work as ever, and that means perfect work. It has never given me one moment's trouble, and I have never paid out but 40 cents for repairs, and that was by my own carelessness.

H. A. REID.

Handsome Illustrated Catalogues, free.

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

exception, such commanding firm prices. Lemons are offering at unchanged rates, with market for other than very best devoid of firmness. Limes were obtainable at same figures current the preceding week.

Oranges—Navel 3 box. 2 00@3 50
St. Michaels — @—
Seedlings 75@1 25
Tangerines, half box 85@1 00
Lemons—Cal., select, 3 box. 1 75@2 00
Cal., good to choice 1 00@1 50
Cal., common to good 75@1 00
Limes—Mexican, 3 box. 4 00@4 50
Cal., small box. 75@1 00

Nuts.

Little is doing in this line, but market is firm for Almonds, with few offering. Walnuts of desirable quality are being quite steadily held. Peanuts are in light stock and market tends in favor of sellers.

California Almonds, paper shell 9 @10
California Almonds, soft shell 6 @ 8
California Almonds, hard shell 4 @ 4 1/2
Walnuts White, paper shell 6 @ 7
Walnuts White, soft shell 5 @ 6
Walnuts White, Cal., standard 5 @ 6
Chestnuts, Cal. Italian — @—
Peanuts, Cal., fair to prime 4 @ 4 1/2
Peanuts, Eastern hand-picked 5 @ 6
Pine Nuts 7 @ 8

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|----------------------------|--------------------|----------------------|
| Flour, 4-sks. 110,174 | 4,889,621 | 5,515,143 |
| Wheat, cts. 87,678 | 10,255,767 | 10,551,314 |
| Barley, cts. 29,115 | 4,464,938 | 4,788,587 |
| Oats, cts. 12,520 | 669,755 | 530,250 |
| Corn, cts. 8,495 | 360,523 | 276,527 |
| Rye, cts. 1,475 | 47,711 | 187,538 |
| Beans, sks. 5,179 | 557,566 | 533,752 |
| Potatoes, sks. 16,410 | 1,069,894 | 1,073,086 |
| Onions, sks. 4,612 | 107,938 | 131,048 |
| Hay, tons. 1,484 | 118,460 | 133,904 |
| Wool, bales. 946 | 68,500 | 76,088 |
| Hops, bales. 246 | 9,095 | 7,421 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|----------------------------|--------------------|----------------------|
| Flour, 4-sks. 5,252 | 3,086,332 | 4,196,791 |
| Wheat, cts. 43,957 | 9,756,946 | 9,884,510 |
| Barley, cts. 2,285 | 2,996,749 | 3,600,258 |
| Oats, cts. 18 | 18,560 | 33,290 |
| Corn, cts. 30 | 43,564 | 25,169 |
| Beans, sks. 32 | 301,112 | 390,029 |
| Hay, bales. 190 | 75,617 | 67,693 |
| Wool, lbs. 14,211,776 | 16,628,249 | 16,628,249 |
| Hops, lbs. 5,600 | 1,386,042 | 1,279,425 |
| Honey, cases. 8 | 7,446 | 2,781 |
| Potatoes, pkgs. 49 | 182,441 | 77,824 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets are for the week ending Wednesday noon, while quotations are based on values current on

above dates. It is the aim of the THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, June 1.—California dried fruits firm; apples steady. Evaporated apples, common, 7 1/2 @ 8c; prime wire tray, 9 @ 9 1/4c; wood dried prime, 9 1/4c; choice, 9 1/2c; fancy, 10c. Prunes, 4 @ 8 1/4c; lb. Apricots, Royal, 8 @ 10c; Moorpark, 10 @ 12c. Peaches, unpeeled, 6 @ 9c; peeled, 12 @ 16c.

Eastern Sales of California Fruit.

NEW YORK, May 26.—The Earl Fruit Company sold California cherries at open auction here to-day, realizing prices as follows: Centennial \$1.40 @ 1.70; Knight's early black, \$1; black Tartarian, 70c @ \$1.25.

CHICAGO, May 26.—The Earl Fruit Company sold to-day: Cherries—Royal Anne, \$1; black Tartarian, 55c @ \$1.05. Seed Apricots, \$1.85 per half crate.

CHICAGO, May 26.—Porter Bros. Company sold to-day at open auction California fruit at the following prices: Apricots, Newcastle, \$1.85 per crate; Cherries, Royal Anne, \$1.15 @ 1.25 per box; Centennials, \$1.05; Tartarian, 60c @ \$1; Bigreau, 45 @ 55c.

NEW YORK, May 26.—Porter Bros. Company sold to-day at open auction California fruit at the following prices: Cherries, Royal Anne, \$2.10 per box; Dewey, \$2.05; Centennial, \$1.25 @ 1.50; Bigreau, \$1.15; Tartarians, 75c @ \$1.10.

CHICAGO, May 31.—The Earl Fruit Company's auction sales of California Fruit to-day brought the following prices: Cherries—Black Tartarian, 80c @ \$1.30; Royal Anne, 85c @ \$1.30. Royal Apricots, \$1.05 @ 1.95; average, \$1.49; Seedling, \$1.35 @ 1.65.

NEW YORK, May 31.—Porter Bros. Company sold to-day at open auction California fruit at the following prices: Apricots—Royal, \$1.55 @ 1.45; Seedlings, \$1.50 @ 1.75; Newcastles, \$1.45 @ 1.50; Pringles, \$1 @ 1.55. Cherries—Royal Annes, \$1.75 @ 3; Republicans, \$1.40 @ 2.65; Mixed, \$2.15 @ 2.25; Tartarians, 70c @ \$1.75; Centennials, \$1.25 @ 1.45; Bigreau, \$1.35; Blacks, \$1; Rockports, 90 @ 95c; Pontiacs, 75 @ 85c. Peaches, Alexanders, \$2.10 per box. Plums, Cherry, \$1 per box. Gross sales on 1814 packages, \$2412.

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Members of the San Francisco Produce Exchange.

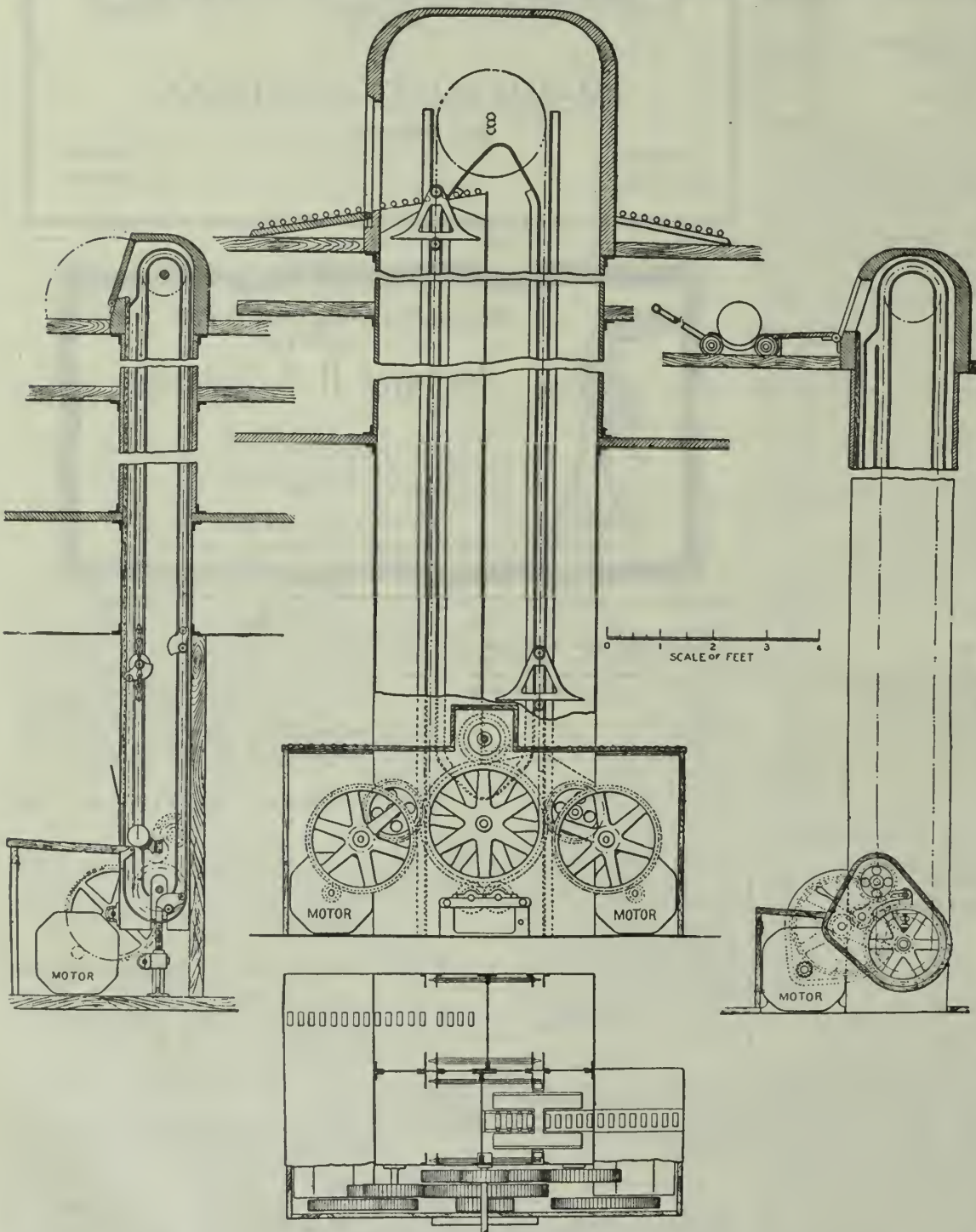
Personal attention given to sales and liberal advances made on consignments at low rates of interest.

Electrical Equipment of War Vessels.

Coupled with the name of Dewey, probably no names have been for the past month in more frequent use than those of the vessels built in San Francisco by the Union Iron Works—the Olympia and the Oregon. Like the San Francisco, the Charleston and the Monterey, they are provided with electrical equipment which greatly adds to their efficiency. Power transmission on war vessels is a present prominent factor in their mechanical equipment, and the present conflict offers fair opportunity for a crucial test.

Electricity enters prominently into present naval equipment, as do steam and compressed air, the former being the favorite with most naval officers and constructors. Referring to the electrical devices on the vessels named above, it is also to be noted that other nations are no less alert to the up-

quarters, when the upper decks might be swept by the fire of machine guns. Current for the hoists is taken from either of two mains—one for the forward hoists and one for the after hoists, leading from the dynamo-room through iron armored conduits. These two main feeders will be connected to the main switchboard in such a manner as to be supplied by either dynamo singly or from dynamos operating on lighting circuits. Each 8-inch hoist is capable of delivering three rounds per minute to its respective gun. A round consists of one shell and two powder tanks, each being handled separately. The interior of the hood is fitted with a drum mounted on the sprocket-wheel shaft, as shown, having a recess to receive the charges and so arranged as to close the opening except at the instant of discharging or receiving a charge, an important and necessary function, as the principal danger of derangement to this kind of ammunition hoist, is from splinters and debris getting into the hoist casing and wrecking the



ELECTRICAL AMMUNITION HOISTS.

to-date achievements of science. Herewith are illustrated electrically operated ammunition hoists placed by Geo. W. Dickie, of the Union Iron Works, for the Japanese cruiser Chitose, the electrical system of which is on the two-wire plan, operated at eighty volts. There are ordinary service circuits and battle circuits, the latter being run under the protected deck. All wires are covered with extra heavy rubber insulation, protected by braid soaked in waterproof compound. Through boiler and engine compartments the wires are in iron armored conduits; elsewhere, except the running light circuits and those running up masts, the wire is in wood moulding. All of these hoists are of the continuous running, endless-chain type, delivering on the gun deck through armored hoods, as shown in the illustration. The traveling carriages are suspended on flat link chains, working over sprocket wheels.

The hoists are fitted, if necessary, to discharge on the deck below the regular discharge, this arrangement being indicated on the drawing. The object of this provision is to be able to serve the guns through ammunition scuttles by hand from below at close

moving points. All doors in the armored hoods are water-tight when closed, and are arranged to act when open as discharge or feeding tables for the ammunition. The introduction into modern ships of war of quick-firing ordnance up to 8 inches has made the serving of ammunition one of the many difficult problems that confronted the naval architect and the engineer. It also gives an idea of how long a naval engagement will last between modern ships, if they have a chance to do their best, to consider that a ship equipped as the Chitose will be can fire all the ammunition she can carry in two hours.

A decision of interest throughout the State was handed down last week by United States Circuit Judge Morrow. It declares in effect that the fixing by a Board of County Supervisors of rates to be charged by an irrigation company is a Federal question. The opinion was given in the matter of the demurrer of the defendants in the case of the San Joaquin and King River Irrigation Company and others against the Board of Supervisors of Stanislaus county.

California's Mineral Yield for 1897.

Statistics are always interesting; when official are worthy of publication, and when approximately correct, are of value. Herewith is published the 1897 yield of California, furnished by Statistician Chas. G. Yale:

The following is the yield and value of the mineral substances of California for 1897, as per returns received at the State Mining Bureau in answer to inquiries:

| | | |
|------------------|--------------------|--------------|
| Antimony | 25 tons. | \$ 3,500 |
| Asphalt | 22,697 tons. | 404,350 |
| Bituminous rock | 45,470 tons. | 128,173 |
| Borax | 8,000 tons. | 1,080,000 |
| Cement | 18,000 bbls. | 66,000 |
| Clay—Brick | 97,468 M. | 563,240 |
| Pottery | 24,592 tons. | 30,200 |
| Coal | 87,440 tons. | 106,255 |
| Copper | 13,638,626 lbs. | 1,540,666 |
| Gold | 767,842 oz. | 15,871,401 |
| Granite | 339,288 cu. ft. | 188,024 |
| Gypsum | 2,300 tons. | 19,250 |
| Infusorial earth | 5 tons. | 200 |
| Lead | 596,000 lbs. | 30,264 |
| Lime | 287,800 bbls. | 252,900 |
| Limestone | 36,796 tons. | 38,556 |
| Macadam | 487,911 tons. | 313,087 |
| Magnetite | 1,143 tons. | 13,671 |
| Manganese | 504 tons. | 4,080 |
| Marble | 4,102 cu. ft. | 7,280 |
| Mineral paint | 1,115,280 lbs. | 8,165 |
| Mineral waters | 1,508,192 gals. | 345,863 |
| Natural gas | 63,920,000 cu. ft. | 62,657 |
| Paving blocks | 1,711 M. | 35,235 |
| Platinum | 150 oz. | 900 |
| Petroleum | 1,911,569 bbls. | 1,918,269 |
| Quicksilver | 26,648 flasks. | 993,445 |
| Rubble | 333,212 tons. | 287,025 |
| Salt | 67,851 tons. | 157,520 |
| Sandstone | 77,000 cu. ft. | 24,086 |
| Serpentine | 2,500 cu. ft. | 2,500 |
| Silver | 754,649 oz. | 452,769 |
| Slate | 400 squares. | 2,800 |
| Soda | 5,000 tons. | 110,000 |
| Total value | | \$25,142,441 |

The aggregate yield in 1896 was \$24,291,398, and in 1895 it was \$22,844,664.

The relative rank of the counties of the State, in point of mineral production, is given in the following table. In each case the value includes that of all mineral substances combined produced in the respective counties for the year. Some counties produce, in addition to gold and silver, five, six or seven other substances, while other counties, which yield little or no gold or silver, produce in large quantities quicksilver, mineral oils, copper, lead, asphalt, structural materials, etc. The figures after the names of the counties indicate aggregate value of all mineral products for the year, including the precious metals. The term "undistributed" includes total values of such substances as are grouped to avoid disclosing private business, as in the case of a single operation in a county. In the tables published by the State Mining Bureau, from which these figures are taken, the amount and value of each substance in said county is set forth. It is, therefore, necessary in some cases to place the figures in the "undistributed" column.

| | |
|---------------------|--------------|
| 1. Shasta | \$ 2,294,706 |
| 2. Nevada | 1,805,567 |
| 3. Tuolumne | 1,811,268 |
| 4. Los Angeles | 1,648,674 |
| 5. Placer | 1,578,637 |
| 6. Calaveras | 1,414,006 |
| 7. Amador | 1,368,770 |
| 8. San Bernardino | 1,312,780 |
| 9. Trinity | 1,107,961 |
| 10. Kern | 931,604 |
| 11. Siskiyou | 842,157 |
| 12. El Dorado | 885,312 |
| 13. Butte | 880,010 |
| 14. San Diego | 826,568 |
| 15. Mono | 598,480 |
| 16. Napa | 565,372 |
| 17. Santa Barbara | 481,382 |
| 18. Mariposa | 452,087 |
| 19. Sierra | 370,254 |
| 20. Ventura | 368,282 |
| 21. Plumas | 339,953 |
| 22. Inyo | 330,079 |
| 23. Alameda | 303,330 |
| 24. Santa Clara | 301,800 |
| 25. Humboldt | 290,551 |
| 26. Santa Cruz | 242,941 |
| 27. Lake | 211,131 |
| 28. Sacramento | 201,663 |
| 29. Riverside | 188,022 |
| 30. San Benito | 158,423 |
| 31. Yuba | 141,638 |
| 32. Madera | 134,427 |
| 33. Sonoma | 129,797 |
| 34. San Francisco | 114,717 |
| 35. Fresno | 112,434 |
| 36. Contra Costa | 106,380 |
| 37. Marin | 98,200 |
| 38. San Joaquin | 79,411 |
| 39. Lassen | 49,859 |
| 40. San Mateo | 40,000 |
| 41. Stanislaus | 39,217 |
| 42. Solano | 31,276 |
| 43. San Luis Obispo | 28,016 |
| 44. Tulare | 22,544 |
| 45. Del Norte | 16,710 |
| 46. Orange | 12,000 |
| 47. Colusa | 3,200 |
| 48. Tehama | 2,400 |
| 49. Monterey | 2,300 |
| 50. Undistributed | 438,264 |
| Total | \$25,142,441 |

In 1897 all the antimony produced in California was from Kern county. Asphaltum was produced in Kern and Santa Barbara counties; bituminous rock in Santa Cruz and San Luis Obispo. Brick clay in quantities was utilized in Alameda, Butte, Kern, Los Angeles, Marin, Sacramento, Santa Clara, San Joaquin, San Francisco and Shasta counties. The cement all came from San Bernardino. Clay for pottery was from Amador, Placer, Riverside, Sacramento and Solano counties. The coal was from Alameda, Amador, Contra Costa and

Riverside counties; and the copper from Calaveras, Nevada and Shasta counties. The granite produced was from Madera, Nevada, Placer, Sacramento, San Luis Obispo, Solano and Tulare; gypsum from Los Angeles and San Benito; infusorial earth from Los Angeles; and lead from Inyo and Mono counties. The lime and limestone came from El Dorado, Kern, Mono, Monterey, San Benito, San Bernardino, Santa Cruz, Shasta, Solano and Tulare counties. Macadam was quarried in largest quantities in Alameda, Los Angeles, Marin, Sacramento, San Benito, San Francisco, Solano and Sonoma counties. The magnesite was all from Napa county; manganese from Alameda; marble from Amador and San Luis Obispo; and mineral paint from Calaveras, Sonoma, Riverside and Stanislaus counties. Mineral waters were bottled and sold from Butte, Colusa, Contra Costa, Fresno, Humboldt, Lake, Monterey, Napa, Santa Barbara, San Benito, Santa Clara, San Diego, San Luis Obispo, Sonoma and Tehama counties. The natural gas is mainly from San Joaquin, though a little is utilized in Santa Barbara county. Paving blocks are from Sacramento, Solano and Sonoma. The platinum is from Trinity and Del Norte. Petroleum is from Fresno, Los Angeles, Orange, Santa Barbara, Santa Clara and Ventura counties. Quicksilver was produced in Colusa, Lake, Napa, San Benito, Santa Clara, San Luis Obispo, Sonoma and Trinity counties. Rubble in quantities was quarried in Humboldt, Madera, Placer, San Diego, San Francisco, Sacramento, San Luis Obispo and San Mateo counties. Salt came from Alameda, Colusa, Riverside and San Diego; sandstone from Colusa and Yolo; serpentine from Los Angeles; slate from El Dorado; and soda from Inyo. Many of these substances are found in other counties than those named, but were only mined in 1897 in the counties stated. Only three counties produced as many as seven different mineral substances in 1897, and these were Los Angeles, Sacramento and San Luis Obispo. As far as the largest production of different substances was concerned, the "banner counties" of 1897 were as follows: Alameda county leads in pro-

duction of manganese and salt; Amador in marble; Colusa, sandstone; Contra Costa, coal; El Dorado, slate; Humboldt, rubble; Inyo, lead and soda; Kern, antimony; Los Angeles, brick clay, gypsum, infusorial earth, serpentine and petroleum; Napa, magnesite, quicksilver and mineral waters; Nevada, gold; Riverside, pottery clay; Sacramento, granite; San Bernardino, borax and cement; San Francisco, macadam; San Joaquin, natural gas; Santa Barbara, asphaltum; Santa Cruz, bituminous rock, lime and limestone; Shasta, copper and silver; Siskiyou, platinum; Sonoma, mineral paint and paving blocks.

It is to be noted that only one county has had the lead in five things—Los Angeles; two lead in three articles—Napa and Santa Cruz; and five in two—Alameda, Inyo, San Bernardino, Shasta and Sonoma.

Scientific and Accurate War Reports.

Referring to the illustrated article in last week's issue on the production of animated pictures, it is further interesting to note the recent remarks of T. A. Edison's agent to the N. Y. *Electrical Review*, showing a new scientific system of "reporting" war news for the papers. He said:

"Newspapers are busily engaged and spending money without stint to get news from the front, and we are quite as busy getting picture reports from the scene of action in connection with the war. By picture reports I mean actual animated pictures of the movements of troops, ships, etc. Our representative will be among the first to land in Cuba. He will be properly accredited, and you may expect the portrayal of some very thrilling scenes by means of the Edison projectoscope.

"When a batch of negatives arrives it means practically the issuance of a war extra by us. The subjects are telegraphed ahead to us here, and the factory works day and night to get the negatives properly developed and rushed to the theaters and

other customers. We issue extras properly describing the subjects and keep the printers right at it so as not to lose a moment. Telegrams by the score are rushed to the theaters, and in a marvelously short time the pictures are shown to the audience. The anxiety which awaits the first development of a film at the works is very great, as any one of a dozen accidents might happen, which would ruin the production, and time, labor and money would be thrown away. In the film taken at Havana—the 'Funeral of Nine of the Maine Victims,' which, by the way, is one of the most remarkable ever taken—there are no less than 2500 pictures, each one complete and perfect in itself. The scene must have no breaks in continuity or the result is not satisfactory. These scenes are taken at a rate of about forty pictures per second.

"We have our troubles, however, because we are limited as to the time of day in which to take the pictures. We must have a good light and if battles are to take place at night or in a rainstorm we have to throw up our hands. It seems a large proposition to take a battle, but it can be done, and right in this line let me say that Mr. Edison stated the other day that there should be an animated picture camera on the bridge of every war vessel to take engagements between ships, maneuvers, etc., and thus secure a perfect record of the whole thing. The United States Government has spent hundreds of thousands of dollars in the preparation of the annals of the Civil War. Well, here is a chance for a faithful and more vivid record than is possible in cold type.

"Suppose, for instance, our man who was at Hongkong shortly before the battle of Manila and from whom we have not heard for some time (and naturally suppose he went to Manila with one of the ships) had really taken the great naval battle. Would it be possible to find a scene to reproduce which would so thrill an American's heart?

"We are in the infancy of this great invention of Mr. Edison. It will surely be a most important factor in matters of record in the near future and play a part in mechanical and medical science as well."

Breeders' Directory.

Six lines or less in this directory at 50c per line per month.

Horses and Cattle.

F. H. BURKE, 626 Market St., S. F. Holsteins, winners for three years of State Fair butter contests; Jerseys and Durhams competing. New Catalogues. Registered Berkshires.

JERSEYS, HOLSTEINS & DURHAMS. Best Butter and Milk Stock. Thoroughbred Hogs and Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETERSAXE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

JERSEYS—The best A. J. C. C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

E. S. DRIVER, Antelope, Cal. Durham Bulls, Jacks and Jennies for sale.

Poultry.

W. H. YOUNG, Stockton, Cal. All varieties of Fowls, and Belgian Hares. Prices on application.

SANTA TERESA POULTRY FARM, Eden Vale, Cal. Barred Plymouth Rocks, Black Minorcas, White Leghorns, Brown Leghorns. Fine Stock and Eggs for sale. Send for circular.

WILLIAM NILES & CO., Los Angeles, Cal. Nearly all varieties of Poultry, Dairy Cattle and Hogs.

EXCELSIOR POULTRY YARD, Kingsburg, Cal. Send for circulars describing stock.

WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

MANHATTAN EGG FOOD, Red Ball Brand, at all grocers; or wholesale, Tillman & Bendel, S. F.

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BERKSHIRE AND POLAND-CHINA HOGS, Best Stock; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

J. P. ASHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Swine.

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J. B. HOYT, Bird's Landing, Cal. Importer and Breeder of Shropshire Sheep; also breeds Crossbred Merino and Shropshire Sheep. Rams for sale. Prices to suit the times. Correspondence solicited.

Dogs.

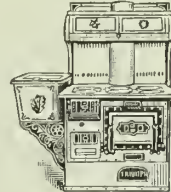
MISS DELLA BEACH, San Jose, Cal. Breeder of Red'd Thoroughbred Scotch Collie Shepherd Dogs.

RANCHO BENITO KENNELS, Thor'd Scotch Collies. Pups for sale. At stud, Imp. Ormskirk Blucher; fee \$35. Stewart & Son, Arroyo, Cal.

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TRIUMPH STEEL RANGE into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for \$25.00. The regular retail price is \$50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21½ inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. **WM. G. WILLARD**, Manufacturer, 113 & 115 N. Second St., St. Louis, Mo.



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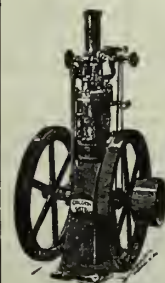
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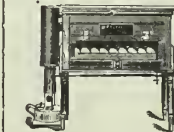
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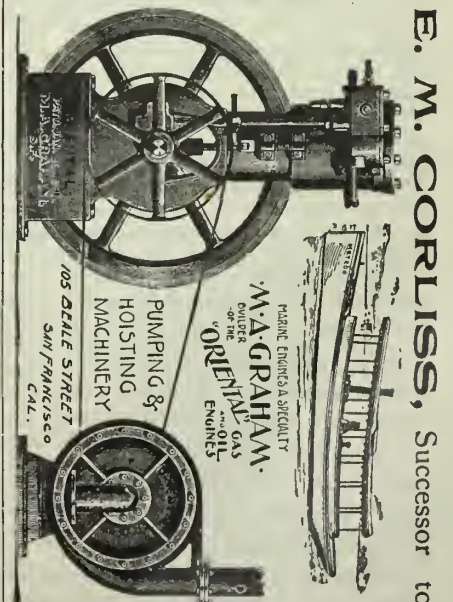


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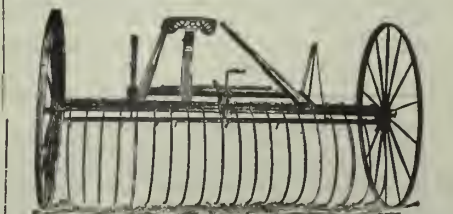
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We guarantee the rakes as perfect in every respect. We can supply extra parts, having a stock on hand.

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A Timely Discourse on Disinfectants.

By Prof. E. W. HILGARD, Director of Experiment Stations of the University of California.

With the advent of warm weather the demand for disinfectants and deodorants for domestic and hospital use becomes pressing, especially in view of the dry season and consequent liability of the water supply to increased contamination, and also of a scarcity of water for flushing the drains and sewers. It therefore seems timely to discuss briefly the main points in the premises, adding some suggestions towards facilitating and cheapening disinfection, resulting in part from investigations made on the subject at the agricultural laboratory during the past season. These investigations also developed several curious facts regarding preparations commercially sold for these purposes.

Deodorants and Germicides.—Attention should first be given to the fact that many deodorants have but very faint antiseptic properties; and that only a few of the preparations commonly known as antiseptics are true germicides, that is, actually kill the foul germs, so as to render them incapable of further development; unless used in such quantities as to be too costly. Of those that have passed into more general use, bi-chlorid of mercury (corrosive sublimate), bleaching powder or "chlorid of lime" and chlorin gas, and sulphurous gas (from burning sulphur), are the most energetic germicides as well as deodorants. To these should be added the lately introduced formaldehyde or formalin gas, either generated from a lamp causing the incomplete combustion of wood alcohol, or sold in solution. The eminent merit of this agent is not yet appreciated by the public at large; its solution in water, with a proper addition of glycerine or sugar, should supersede all other preparations for the conservation of fruit samples for exhibition purposes.

The substances mentioned, all poisonous, readily kill not only all disease germs of bacteria, but also the various forms of the common mould, which are among the most resistant. Salicylic and carbolic acids in proper concentration accomplish the same end, yet are much less energetic, and on account of its strong odor the latter is frequently objectionable. The same objection lies, in an aggravated degree, against chlorid of lime, free chlorin and sulphurous acid. It is the absence of odor and almost of taste, that has brought salicylic acid into such extended use. Yet even a fairly strong solution of salicylic acid is readily destroyed by the common blue mould when proper nourishment is supplied. It stands on the line between true germicides and mere antiseptics, that is, substances which prevent or greatly retard the development of diseased germs and bacteria, but without killing them save on very long exposure. The ease with which salicylic acid can be introduced into food products without its being observed by the taste has led to a widely extended illegitimate use, and to a marked increase of dyspepsia among persons using canned and otherwise preserved fruits, fruit juices and vegetables. For the disinfection of drains and closets, salicylic acid, even if its price permitted, would be but a poor resort.

Sulfate of iron, commonly known as copperas, is a fair deodorant and antiseptic; but just as in the case of carbolic acid, the odor is a practical objection, so in that of copperas the ineradicable stains it leaves every-

where are a nuisance to the house-keeper. For water closets and wash-stands, a colorless and inodorous antiseptic of sufficient efficacy and cheapness is the great desideratum, so as to prevent the generation of "sewer" gas, the absolute killing of the germs under ordinary conditions being of less moment.

Relative Antiseptic Effectiveness.—Of such substances there is a considerable number among the mineral or metallic compounds available in commerce. The great domestic preservative is common salt; but its efficacy is quite slight as compared with a number of others, as will be best seen from the table below, showing their relative antiseptic efficiencies. The data are partly taken from standard works, partly derived from experiments made by Mr. Bioletti, in charge of the bacteriological laboratory, which will be published in full hereafter.

ANTISEPTIC RATIOS:

| | |
|---------------------------------------|--------|
| Bi-chlorid of mercury | 14,800 |
| Free chlorin | 4,000 |
| Salicylic acid | 1,000 |
| Aluminum chlorid | 714 |
| Aluminum sulfate | 640 |
| Zinc chlorid (much used in hospitals) | 523 |
| Carbolic acid | 333 |
| Boric acid | 143 |
| Potassium sulfate (copperas) | 90 |
| Magnesium chlorid (bittern) | 104 |
| Calcium chlorid | 25 |
| Sodium chlorid (common salt) | 6 |

It must be understood that these figures are merely relative and are not the same for all kinds of bacteria. Mr. Bioletti's experiments were made with respect to the common atmospheric germs, such as we have largely to deal with in sewage.

Aluminum Salts.—It will be observed that of the saline mineral substances named above, aluminum chlorid and aluminum sulfate stand highest; and fortunately these compounds are easily accessible in general commerce, though not at present in the San Francisco market. The sulfate can be delivered at San Francisco at about three cents a pound from the East, but can easily be manufactured on this coast. The sulfate can practically be transformed into the more efficacious chlorid by simple intermixture with common salt, using about equal amounts of each. Sea salt is preferable on account of its contents of bittern or magnesium chlorid; and sea water can be made into a very effective antiseptic by the addition of three pounds of aluminum sulfate to every ten gallons. This makes an excellent solution for the dripping apparatus for urinals and washstands that has found some acceptance, and it is vastly cheaper as well as many times more effective than the high-priced solutions usually recommended with which it has been experimentally compared.

Colorless, Inodorous and Non-poisonous.—A solution made by dissolving 3½ pounds of aluminum sulfate and an equal amount of common salt in 10 gallons of water is now in use at the University with excellent result. It is found that it would take 120 pounds of aluminum sulfate to render 1000 gallons of average sewage completely sterile; but less than half that amount will prevent the formation of sewer gas, and the cost of thus deodorizing closets and urinals is almost nominal. This "colorless, inodorous and non-poisonous" solution should be in abundant supply in all hospitals, soldiers' quarters and public institutions; and can readily be used in private houses as well, without danger of accidents. It can also be used as an astringent antiseptic wash for wounds.

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An Elgin watch always has the word "Elgin" on the works. Elgin National Watch Co., Elgin, Ill.

Rubber From Corn.

Chemists of the Glucose Sugar Refining Company claim to have discovered a process for vulcanizing the oil from corn in such a manner as to produce rubber. They say this will revolutionize the rubber trade and give them control of at least the manufacture of bicycle tires. Five chemists in the employ of the company have been working on this innovation for some months past. According to reports, the chemists have found that the oil of the corn properly treated and vulcanized is superior to that of the product of the South American rubber tree, is more resilient and more lasting; and it is said that the manufacture of rubber under the new process will become an important part of the business of the glucose company. The process was accidentally discovered some months ago. It is also said that the new process will greatly lessen the cost of rubber, especially that variety that is used in the manufacture of bicycle tires, which is required to be thin, durable and resilient. It is claimed that the new variety of rubber will withstand much more pressure than that now in use for tires and that it will offer more resistance to outside force.

Chronic Rheumatism.

From the Industrial News, Jackson, Mich.

The subject of this sketch is fifty-six years of age, and actively engaged in farming. When seventeen years old he hurt his shoulder, and a few years after commenced to have rheumatic pains in it. On taking a slight cold or the least strain, sometimes without any apparent cause whatever, the trouble would start and he would suffer the most excruciating pains.

He suffered for over thirty years, and the last decade has suffered so much that he was unable to do any work. To this the frequent occurrences of dizzy spells were added, making him almost a helpless invalid.



In all Sorts of Weather.

He tried the best physicians, but without being benefited, and has used several specific rheumatic cures, but was not helped. About one year and six months ago he read in this paper of a case somewhat similar to his which was cured by Dr. Williams' Pink Pills and concluded to try this remedy.

After taking the first box he felt somewhat better, and, after using three boxes, the pains entirely disappeared, the dizziness left him, and he has now for over a year been entirely free from all his former trouble and enjoys better health than he has had since his boyhood.

He is loud in his praises of Dr. Williams' Pink Pills for Pale People and will gladly corroborate the above statements. His post-office address is Lorenzo Neeley, Horton, Jackson county, Michigan.

All the elements necessary to give new life and richness to the blood and restore shattered nerves are contained, in a condensed form, in Dr. Williams' Pink Pills for Pale People. All druggists sell them.

Irrigated Farm

FOR SALE. 450 ACRES. FREE WATER. Unlimited Quantity. In the famous Boise Valley, Idaho.

This is a great bargain for any one interested in stock or dairy business. Will produce over 2000 tons alfalfa yearly, at a minimum cost. Excellent cattle range convenient. TATE & STEIN, Boise, Idaho.

Feeds and Feeding.

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This is a practical, thorough and complete work based on what has been done: a record of solid facts. Every Feeder, Breeder or Farmer should have it for every-day reference.

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De Laval Alpha "Baby" Cream Separators were first and have ever been kept best and cheapest. They are guaranteed superior to all imitations and in finishing elements. Endorsed by all authorities. More than 125,000 in use. Salesmen to one of all others combined. All styles and sizes—\$50. to \$325.—Save \$5.—to \$10.—per cow per year over any setting system, and \$3.—to \$5.—per cow per year over any imitating separator. New and improved machines for 1898. Send for new Catalogue containing a fund of up-to-date dairy information.

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\$10 A DAY TO AGENTS MURAT HALSTEAD'S GREAT WAR BOOK. "Our Country in Danger." All about armies, navies, coast defenses, Maine Disaster, Cuba, Our War with Spain and relations with Foreign Nations. Nearly 600 pages, written since the Maine Disaster. Magnificent colored illustrations. Agents making \$10 to \$30 per day. No experience necessary. Most liberal terms guaranteed. 20 days' credit. Price low, freight paid. Handsome outfit free. Send 9 two-cent stamps to pay postage. PUBLICATION, 1316 N. 824 Dearborn St., CHICAGO.

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RADAM'S MICROBE KILLER is a stimulant of the digestive functions and an intestinal antiseptic of incontestable therapeutic properties, free of drugs and poison. See reports of highest medical and scientific authorities. Drugs and poison fail; M. K. never fails. Bottle \$1.00. It will pay to investigate it. Call or write for complete proofs.

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The shepherd's profit often leaks away through the invisible channel of Lice, Ticks, Itch, Scab and other insect or parasite pests without his knowing what is wrong. **THE REMEDY**—that which will stop the leak and turn the tide toward profit is **ZENOLEUM...**

the Non-Poisonous Cure for all these ills and others. Can be used hot or cold. **Does not Stain the Fleece.** It is cheap—1 gallon makes 100 gallons. **WANT RELIABLE AGENTS** everywhere. Write for circulars, prices, directions and terms.

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There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O. Sold by Druggists, 75c. Hall's Family Pills are the best.

Any guarantee

you want—even *this* we will do:

We will pay \$100 reward for any case of colic, horse ail, curbs, splints, knotted cords, or similar trouble, that



Tuttle's Elixir

will not cure. It is the veterinary wonder of the age, and every stable should have a bottle always on hand. Locates lameness when applied by remaining moist on the part affected.

DR. S. A. TUTTLE.

WAITS RIVER, VT.

Dear Sir:—I have used your Elixir on one of the worst spavins that I ever saw on a horse, and it entirely cured the lameness. I also used it for rheumatism in my family, with just as good a result, and will cheerfully recommend it to any one in want of a liniment.

O. B. GOVE.

Tuttle's Family Elixir cures Rheumatism, Sprains, Bruises, Pains, etc. Samples of either Elixir free for three 2-cent stamps for postage. Fifty cents buys either Elixir of any druggist, or it will be sent direct on receipt of price. Particulars free.

DR. S. A. TUTTLE, Sole Proprietor,
27 Beverly Street, Boston, Mass.

Patrons of Husbandry.

San Jose Grange at Work.

TO THE EDITOR:—"The susceptibility of plants to change in their chemical composition by seed selections and proper cultivation is seen in the development of the sugar beet. When Napoleon set about in making Europe independent in her beet sugar supply the beet contained but 3 per cent of its weight in sugar. But the world has seen the yield of sugar from the beet multiplied by four. It is suggested that the quality of all cereals can be greatly benefited by proper seed selection."

The above from the St. Louis *Globe Democrat* led to a formation of a committee in San Jose Grange, of which the Overseer of the California State Grange is chairman. Prof. Rattan of the State Normal gave an interesting lecture on corn as a member of this committee.

It is expected that reports will be made by Ed M. Ehrhorn, county commissioner, and others from time to time.

Have time but for a line but would suggest that other Granges in California "learn how to select good seed and how to plant it."

G. W. WORTHEN,
Overseer Cal. State Grange.
Willow Glen.

Patriotic Action by Santa Rosa Grange.

The last meeting of the Santa Rosa Grange was patriotic. In view of the number of men who are offering their services to defend their country in case they are needed during the present war, M. Townsend offered a resolution which was seconded by E. D. Sweetser and was carried by the members present.

Mr. Townsend's resolution asked that the dues of grangers who enlist as volunteers be remitted while they are in the service of the country. The mover of the resolution made a stirring, patriotic address, and his remarks were certainly the sentiments of those present.

A ballot was had on the admission of two new members, and they were received into fellowship.

LIGHTING the pyramids of Egypt with electricity and the installation of a 25,000 H. P. plant, to cost some \$400,000, is a plan now under consideration by the British Government, and an American firm is reported as likely to receive the contract. As outlined, the plan includes the generation of electric power at the Assouan falls, on the Nile river, and its transmission a distance of 100 miles through the cotton growing districts, where, it is be-

lieved, the cheap power will permit the building of cotton factories. It is planned to use the power to illuminate the interior corridors of the pyramids, and also operate pumping machinery for irrigating large areas of desert along the Nile.

Invention vs. War.

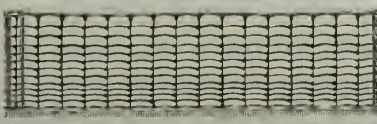
The development of the art of war from this time on will be a battle of inventors. Even our last war was productive of engines of war and destruction which exceeded in number those of the entire world up to that date. The next conflict the chemical patents will vie with the physical. An official is reported to have said, regarding the Maine disaster: "It took just about three men to accomplish the destruction of that gigantic fighting machine. They could, with a large quantity of nitro-glycerine, or some such high explosive packed in bags impervious to water, have accomplished it. By placing in each bag just enough cork to give the whole the approximate specific gravity of the water, dragging one of the bags, a good swimmer could have approached within a short distance of the ship, then dived to escape observation, and come up under the safe shelter of the side of the vessel. To attach the bags to the bottom of the ship would be easy, and a chemical time fuse that would burn under water could be ignited readily enough and time enough for easy escape of the operator." When two or three men with a few dollars' worth of explosives can approach and destroy in a few moments a \$5,000,000 ship of war, it would seem to indicate that the real fighting of the future—on the water at least—will be done with smaller and less unwieldy craft.

The advantage of high explosives is that only a little power is required to convey them to the place of action, and from experience already had with their destructiveness, it is fair to presume that should a half dozen hostile vessels of war succeed in entering any of our harbors, they would quickly be annihilated, not, perhaps, by our own warships or forts, but by a small group of courageous men with infernal machines.

Nations vie with each other in building the largest warship or the largest gun, the utility of which is based upon gunpowder, yet gunpowder is practically out of date. It has given away long since in mechanical operations, which will, in the near future, be the arbiters in the offensive and defensive operations of nations. The cost of one modern warship will build fifty effective torpedo boats. Whatever the result of the present complications, the stimulus to invention in war craft will, we think, tend to smaller size, with an increase in effectiveness.

It is stated that the setting of plaster of Paris is very much accelerated if the plaster is mixed with a 5 per cent solution of common salt—which may be roughly made by adding a tablespoonful of salt to a pint of water.

It's easy to haul a big load up a big hill if you grease the wagon wheels with MICA Axle Grease. Get a box and learn why it's the best grease ever put on an axle. Sold everywhere.



Another War Ship,

the Alabama, is launched. That's right! Improve the navy until nations make it the standard of comparison, as competitors do Page fence. PAGE WOVEN WIRE FENCE CO., Adrian, Mich.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR WEEK ENDING MAY 10, 1898.

- 603,673.—MILK PAIL STRAINER—F. Ansley, Medical Lake, Wash.
- 603,754.—PLANT SUPPORT—Clara L. Baldwin, National City, Cal.
- 603,874.—TESTING APPARATUS—L. C. Christie, S. F.
- 603,681.—TELEPHONE SWITCH—N. Fallek, S. F.
- 603,816.—HAY COCKER—W. H. Frazine, Montpelier, Cal.
- 603,770.—WATER WHEEL—A. Kenney, Los Angeles, Cal.
- 603,880.—WINE PRESS—C. K. Kirby, S. F.
- 603,655.—GAS GENERATOR—C. Ogburn, Phoenix, Ariz.
- 603,923.—COFFEE ROASTER—W. R. Ramsey, Keno, Or.
- 603,711.—PADLOCK—J. A. L. Snyder, Somis, Ca. 1.
- 603,708.—WATER FILTER—Geo. Schussler, S. F.
- 603,803.—DENTAL IMPRESSION MATERIAL—L. L. White, S. F.
- 25,578.—DESIGN CONCENTRATOR BAND—G. Johnston, S. F.
- 25,601.—DESIGN FOR STOVE—A. B. McMillan, Auburn, Wash.

FOR THE WEEK ENDING MAY 17, 1898.

- 604,284.—BACK REST FOR SEATS—E. C. Alford, Portland, Ogn.
- 604,023.—TREATING COPPER MATTE—J. C. Colquhoun, Clifton, A. T.
- 604,208.—POCKET CIGARETTE MACHINE—T. S. Fitch, Oakland, Cal.
- 604,317.—FUEL—G. Griffiths, Los Angeles, Cal.
- 604,327.—REMOVING DRILL RODS—J. Hurst, Nelson, Cal.
- 604,235.—CONCRETE STRUCTURES—D. Jordan, S. F.
- 604,156.—CHAIR—F. H. Kattar, Roslyn, Wash.
- 604,054.—SMELTING FURNACE—H. Lang, Oakland, Cal.
- 604,113.—SCISSORS SHARPENER—H. C. Lausen, Newman, Cal.
- 604,211.—WAVE MOTOR—G. Lofgren, Newark, Cal.
- 604,061.—CONCENTRATOR—W. E. Mendenhall, Flagstaff, A. T.
- 604,125.—RENEWING MATRICES—Ring & Stickney, S. F.
- 604,197.—SAFETY GAS COCK—J. F. Smith, S. F.
- 604,200.—BICYCLE TRAINER—H. Vogeler, S. F.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

WAVE OR CURRENT MOTORS.—Gustav Lofgren, Newark, Cal. No. 604,211. Dated May 17, 1898. This invention relates to a novel means for applying both the forward and return waves or the force of a current running

continuously in one direction for the propulsion of machinery. It consists essentially of a series of vertically adjustable shafts having paddles or floats fixed to them, diagonally disposed sluices, the sides of which are so arranged with reference to the floats that the influx of water in one direction will strike the floats upon one side of the central shaft and cause them to rotate, and the return or reflex wave or current will be so directed as to strike the floats upon the opposite sides and cause them to rotate continuously in the same direction. This is effected by an arrangement of diagonally disposed channels or chutes so fixed with relation to the wheels and the line of movement of the waves that the inflowing wave is directed against one side of the wheel and the outflowing wave against the opposite side, so that an approximately continuous motion in one direction is kept up. In conjunction with this transmitting mechanism is fixed to the upper ends of the shafts, connecting them with a countershaft, through which the power is transmitted.

Under the New Law.

The Orange County Farmers' Mutual Fire Insurance Company was organized at Santa Ana on Saturday afternoon when some twenty-five farmers from El Modena, Orange, Fullerton, Garden Grove and Westminster were present to assist in the company. The organization was made under a provision of the statutes which authorized farmers to unite for the purpose of mutual insurance. A canvass of those interested in the movement revealed the fact that there was represented insurable property to the value of \$57,000, divided among about fifty persons. The law requires that there shall be at least \$50,000 worth of property and twenty-five persons, so the conditions were considered favorable for incorporation. Articles of incorporation were adopted and the following men elected as a board of directors: A. Barrows, Fullerton; F. D. Reed, Garden Grove; H. Larter, Westminster; N. H. Leonard, Bolsa; E. W. Crowell, Orange; Thomas Nicholson, Villa Park; W. A. Beckett, Garden Grove. A committee was appointed to secure the signatures of the members to the articles of incorporation, and will report at another meeting to be called by the secretary.—Anaheim Gazette.

THE CALIFORNIA VEGETABLES IN GARDEN AND FIELD.

A MANUAL OF PRACTICE WITH AND WITHOUT IRRIGATION, FOR SEMI-TROPICAL COUNTRIES.

By EDWARD J. WICKSON, A. M.

Professor of Agricultural Practice in the University of California; Author of "California Fruits and How to Grow Them;" President of the California State Floral Society; Horticultural Editor of the "Pacific Rural Press" of San Francisco, etc.

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- II. Farmers' Gardens in California.
- III. California Climate as Related to Vegetable Growing.
- IV. Vegetable Soils of California.
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- XXIX. Radishes.
- XXX. Rhubarb.
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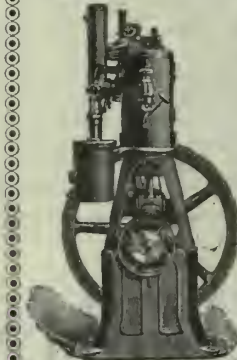
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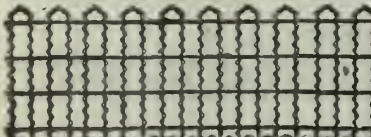


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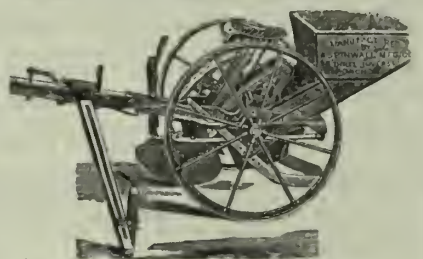
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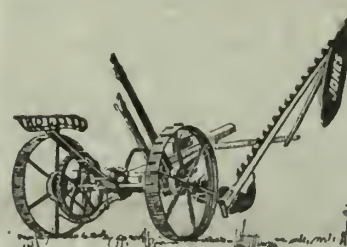
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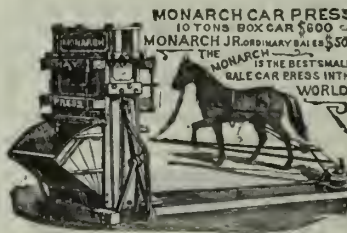
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 24.

SAN FRANCISCO, SATURDAY, JUNE 11, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

The Turlock Irrigation Enterprise.

The extension of irrigation facilities in California has been warmly approved by the RURAL for reasons which we have frequently set forth. Both the individual undertakings by which water supply is developed on separate farms, and the larger enterprises by which districts are supplied by good engineering and financing, are a contribution to the producing capacity of the State and a means for its industrial advancement. Just how great enterprises should be planned and realized with justice to all interests involved is a question concerning which there may be differences of opinion and upon which legislatures and courts may still have much to do. Without attempting analysis of principles and methods involved in each undertaking, we can but express general satisfaction when water is made to flow out upon land which is by that means enhanced in value and increased and ensured in production, independently of a fickle rainfall. From this point of view much interest pertains to an event which transpired last week, viz., the completion of the Turlock irrigation enterprise in the San Joaquin valley.

This enterprise is now eleven years from its inception and it has been carried to completion by surmounting difficulties of all kinds and was apparently rescued from failure by Ex-Judge James A. Waymire of San Francisco, who took up the abandoned contracts three years ago and has now brought the enterprise to a successful termination. The Turlock irrigation system is held to be among the most important in the United States, from the supply of water obtained, the quantity of land to be watered, its transportation facilities and the thoroughness with which the system has been worked out.

The Turlock irrigation district contains 176,210

people formed the Turlock irrigation district, on June 6th, 1887. To carry out the work proposed \$1,200,000 in 6 per cent bonds were issued. Of these \$1,000,000 were sold at 90 cents, and have paid for the work done, the \$200,000 remaining in the treasury to be expended in the completion of 120 miles of distributing canals.

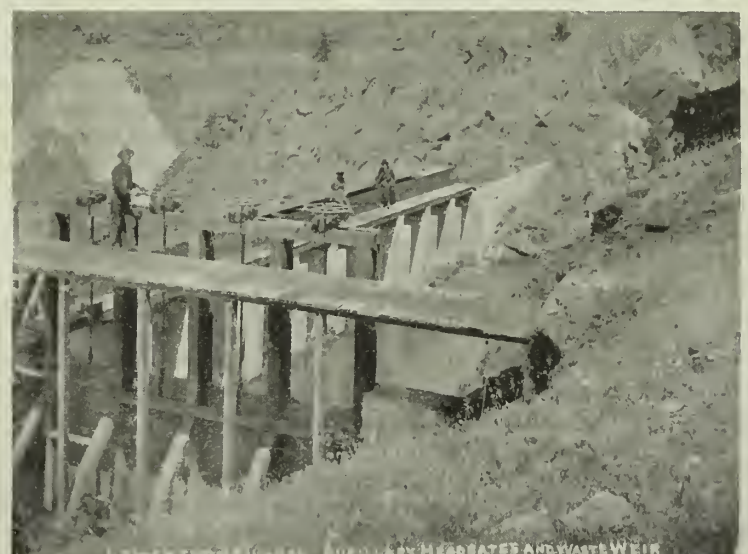
The source of the water supply is the Tuolumne river, which is fed by the melting snows of the high-

there are four flumes, which have been constructed during the last year. Flume No. 1 is a short distance below the great dam, is 200 feet long, and rests on a rocky foundation. Flume No. 2 spans Morgan's gulch for a distance of 560 feet on trestle work at a height of 60 feet. Flume No. 3 has similar support and height and crosses Dry creek at Delaney's ranch. Flume No. 4 traverses Peasley creek, also rests on trestles, is 40 feet in the air and about 400 feet in length.

In all the main conduit system is twenty miles long, and its capacity is 1500 cubic feet, equal to 75,000 miners' inches of water. This is more than sufficient to amply irrigate 375,000 acres of land, or more than twice the amount in the district, and will enable the district to sell water for outside lands, and it is estimated that from the surplus supply sufficient revenue will be obtained to pay the maintenance of the system, and possibly to aid in the redemption of the bonds.

The cost, under the Wright irrigation law, is met by a land tax, which, in the Turlock district, will be at the rate of 40 cents an acre. At the same time it is estimated that the actual value of the land in this district will be increased from \$4,500,000 to \$9,000,000, the average value of water rights in California being placed at \$53 an acre, and in the United States as a whole at \$26 an acre. While the average cost an acre for an irrigation system is \$8.15 in the United States, and in this State \$23, the cost of the Turlock district system is said to have been only \$6.81 an acre. The work has been a long, if a not very expensive, scheme, and that the enterprise has at last been carried out is a matter of satisfaction to those who have labored to secure it.

The engravings on this page are from recent photographs, and illustrate some of the chief construct-



SOME STRIKING FEATURES OF THE TURLOCK IRRIGATION SYSTEM JUST COMPLETED.

acres, of which 139,510 are in Stanislaus and 36,700 are in Merced county. The land is occupied by about 400 families, numbering nearly 2000 persons, and, although fertile, its cultivation has been almost entirely restricted to grain. In years when the rainfall has been abundant the crops of cereals been large and often remunerative. At other times, even for grain, the need for irrigation has been felt, and now that it has been secured the growth of alfalfa, corn, sweet potatoes, sugar beets and all kinds of fruits will add largely to the value of the lands, as well as make the crops assured. This is a condition of affairs which has long been looked forward to, and, soon after the passage of the Wright law, the

est Sierras, and is therefore inexhaustible. Both the Modesto and the Turlock districts gather the volume of water pouring down from the mountains by means of the Tuolumne river dam, said to be the largest overflow dam in the United States. It measures 336 feet from bank to bank, is 129 feet high, 104 feet thick at the base and 20 feet at the crest. The overflow is 160,000 cubic feet a second, and the cost of the construction was nearly \$500,000. From this immense dam at La Grange the water is led through a tunnel, 16 feet wide by 14 feet high and 600 feet long, to the main canal. For a distance of two miles this canal is cut in many places through the solid rock, and is 10 feet deep and 30 feet wide. In addition

ive features of the enterprise. We shall await with interest the changes in development and profitable agriculture which this large waterflow will create upon this important region of the wide valley of San Joaquin.

ACCORDING to Mr. W. Bartos, in *L'Agriculture Rationnelle*, the part of the beet containing the most sugar during the growing season is immediately below the shoulder. During the maturing period, after the leaves have accomplished their vital function and are on the eve of dying, a large percentage of their organic and inorganic substances migrate toward the root and accumulate in the shoulder.

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E. J. WICKSON..... Horticultural Editor.

San Francisco, June 11, 1898.

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The Week.

The usual norther swung in upon California valleys about June 1 and brought a hot wave along, but fortunately for all outdoor interests the heat and drying winds did not insist upon long sessions and again we have the screened sky and cool air which have done so much for California crops this year.

Fruit shipments are exceeding the rate mentioned last week. On Monday morning early twenty-six cars left Sacramento for Eastern points. This is nine cars more than on the same date last year. The same excess does not prevail every day, but the figures are satisfactory and according to some reports very profitable rates are attained.

Fruit canners' agents are still taking the fruits that suit them best at full figures, but there is a report that the prices for the canned product are reducing their orders. Reports of contract prices in the best peach districts range from \$50 to \$60 per ton for Clings and \$30 to \$40 for Freestones; apricots are reported up to \$40 per ton so far. These values are comforting to those who have fruit, as they are 50 to 100 per cent higher than was paid last year. They refer, of course, only to the finest canning fruit.

The general markets are, on the whole, quiet. Wheat is still more droopy: speculators are waiting for the situation to clear. Barley and oats are quiet and corn declines because of the large receipts of Eastern corn. Beans are plenty in buyers' hands at present and little is doing. The low lands of the San Joaquin and Sacramento rivers promise to turn out beans to balance all southern shortages of common beans. Dried apricots enjoy the firmness and interest to be expected from a short crop and prunes are steady. Vegetables and dairy products are ample and slack in price, while eggs are still doing better. Live stock and meats are unchanged, except pork, which has reached a point at which refrigerator car shipments from the East are said to be feasible. There is no change in hay or feedstuffs. Hides are firm and wool is improving. Full details of produce values are to be found in our market columns.

SINCE our reference last week to the May shipments of fresh fruit overland, it has been ascertained that three cars of cherries shipped from Marysville were not included. The total for May is, therefore, 104 cars, and total up to June 5th is 166 cars.

Hot-Valley Dairying.

One of the most significant features of agricultural progress in California is the demonstration of the success of up-to-date dairy policy and practice under the peculiar and trying climatic conditions of the great interior valley. In the popular mind this is not counted one of the great agricultural achievements of California, but it is such none the less, and our present reference to the subject may be looked upon as a plea for such recognition. The suggestion for such a plea and for a brief recital of the lines of policy which have placed interior dairying in a position to warrant such a plea, comes from the very interesting paper by Mr. Hunter of Kern county, which appears upon another page of this week's RURAL PRESS.

It would occupy too much space to indulge in any extended sketch of the experiments upon the results of which the hot, arid districts received most emphatic dairy condemnation for more than twenty years. The causes of the early failures appear by contrast as we proceed to name the essentials which underlie present successes, for it is clear that almost everything which is now being striven for by those who are succeeding was either unknown or neglected by those who failed.

To strike at once at the root of the matter, it must be admitted that present knowledge and improved facilities for milk handling are the secret of the success of recent success, and from this point of view some of the pioneers whose dairy lights went out in the valley can properly claim exemption from blame, for in some cases they did the best they could and gave way before obstacles which at the time seemed insurmountable but are now easily overstepped. The use of ice or refrigerating appliances and the employment of the centrifugal separators to escape the unnumbered ills of pan setting in high temperatures now gives the dairy manufacturer absolute victory over conditions which formerly brought his work to naught in spite of his greatest effort. The use of lower temperatures, secured by evaporation from wet surfaces adjacent to the milk or cream, is also shown to be a profitable recourse in household dairying for which ice cannot be commanded. The use of shade; the double wall and double roof, with their resistance to heat penetration; the storage of the usually cool air of the night and the exclusion of the usually hot air of the day—all these are minor and yet important phases of the present control of temperatures which removes very many of the adverse influences which brought to naught the work of those who labored under the old system. This all means a complete revolution of dairy construction and outfitting, and is profiting by the latest achievements in dairy invention and discovery; and the demonstration of this success, which the most exacting critic must accept as satisfactory, is found in two insurmountable facts, viz: first, the exclusion of coast products from the growing valley markets and the successful shipment of the valley products to large coast cities; second, the capture of the State Fair award for the best butter by the Minnewawa creamery of Fresno and the highest score of above twenty exhibits by California creameries, when judged by Eastern experts, by the New Era creamery of Newman.

These facts are proof that progressive dairying can win success in the face of the most trying climatic conditions and can make a product which secures profits as well as premiums for those who skillfully employ its agencies. They carry, however, another demonstration which shows that the foundation for hot-valley dairying is sound and satisfactory. It is strange that, though for more than twenty years some of the highest priced California dairy products have been secured with cows fed upon alfalfa pasturage or alfalfa hay, there still exists a prejudice against this fodder or else an honest failure to use it successfully. There is, however, at the present time clear proof that alfalfa is not only a good dairy food, but that owners of lands fitted to produce large weights of it have the advantage of all other dairy feeders in the milk-yielding quality of the food and the cheapness with which it can be produced. Aside from alfalfa, the superior conditions in the valley, where heat and water can be associated, for the growth of immense weights of supple-

mentary cattle foods and the success of the silo in preserving it in the best condition of succulence to maintain milk flow and cow hygiene during times of the year when the pasture is scant through drouth or cold, give the valley dairyman other coigns of advantage which can hardly be overestimated.

But while these advantages exist, they do not release the dairyman from absolute dairy requirements which determine profit everywhere. There will be dairy failures in the valley, although the roads to success are as clearly marked as we have claimed. The best creamery outfit, the most skillful manufacture and management will not avail to make money for the dairy farmer who is content to keep poor cows or to treat any cows stingily or neglectfully or to handle the milk carelessly or filthily. The valley, as a whole, has poorer cows than the coast, which is natural, because dairying is new and the herds are too largely made up of the sisters of scrub steers—a relationship intolerable in advanced dairy circles. But the interior is improving its dairy stock and must not be content until the cows possess assimilating and secreting capacity commensurate with the unrivaled food-producing power of the valley lands. The rich, level pastures and the clement climate are favorable for the development of the most profound milking stock in the world.

General policy and practice on the dairy farms must in other respects also accord with the equipment and skill in the creamery. Better buildings to promote comfort and cleanliness among the stock during the rainy season, ample shade in the pastures, abundance of pure water, milkers trained to kindness and speed and cleanliness in their persons and methods and, above all, the intelligent planning and open eye of the dairy farmer himself must attend his enterprise in all its developments. These are the factors which are instrumental in the attainment of the present successes which we count so widely significant, and they must lie firmly in the foundation of the future successes toward which wide and smooth approaches are now open.

THE Fresno plan of pooling the raisin crop seems to be making as good progress as its projectors could expect. Various meetings for organization have been held, and there is still final drafting of constitution and by-laws to be accomplished. At the meeting in Fresno June 6 the following were elected trustees of the "California Raisin Growers' Association," the seven named having received the highest vote of the eleven who were nominated: L. S. Chittenden, Hanford, 199; T. C. White of the First National Bank, 192; M. Theo. Kearney, 187; A. L. Sayre, Madera, 185; Louis Einstein of the Bank of Central California, 182; W. S. Porter, Hanford, 171; and Robert Boot, Oleander, 153 votes. The elected trustees immediately organized with Mr. Kearney as president; W. S. Porter, vice-president; T. C. White, treasurer; and A. L. Sayre, secretary. They propose to proceed at once with the business in hand.

CALIFORNIA wine producers are keeping the wires warm between here and Washington with protests against a commercial treaty with France, which is now pending before Congress. The treaty will no doubt be of advantage to some American products which seek a market in France, but it acts the other way towards our own productions which compete with importations from France. The same proposition arose more than twenty years ago and was largely prevented by the protests of the California wine interest. They propose to be heard again to the same effect if possible. President McKinley has directed that the matter be laid before Mr. Casson, the special commissioner, who arranged the agreement with France.

THE first peanut-oil factory in the United States will be established at Norfolk, Va. The oil is highly valued in Europe, as it is stated that fully \$5,000,000 worth of peanuts are taken into Marseilles annually for the manufacture of oil, which is used in toilet soaps and for other purposes. The peanut flour is quite extensively used in Europe, and made into bread, cakes, biscuits, etc. Peanut oil is a large part of the so-called olive oil that comes from France. It enters into the composition of castile soap, and is useful in many ways.

QUERIES AND REPLIES.

Bordeaux for Crown Knot.

TO THE EDITOR:—Will you kindly inform me if there is a remedy that will kill black knot without injuring the tree, as I find the Robe de Sargent very much affected with it?—JAMES FARWELL, Los Gatos.

There have been a number of reports of injury when bluestone solution has been injected into holes bored in the knot. No injury has been reported from the use of the Bordeaux mixture. The lime seems to take the edge off the bluestone, and yet does not destroy its effectiveness upon the knot. Remove the knot, smoothe the surface and apply the Bordeaux mixture to the wound, leaving the hole open until it has dried well, and then draw back the soil. Many have reported the wounds healing over after such treatment and no return of the knot.

Pulvinaria on Grape.

TO THE EDITOR:—I have discovered on my Isabella grape arbor what to me is a new pest: tufts of cotton the size of a small bean, with an end slightly darker. Application of a match develops the color to a dark brown. I went all over the vine with a lighted candle and burned the devils out. I found they had in some places left the cotton shields and looked like half a short swollen wheat grain. What are they, and how must they be fought? Are they the cottony cushion scale? They seem indifferent, in the cotton stage, to the character of their support, dead shoots, green leaves, painted slat or anything. Small ants seem to go along with them.—A. O. CARPENTER, Ukiah.

The insects are *Pulvinaria innumerabilis*—an old foe of the Eastern grape vines. They are not widely spread in California, though we have had several specimens of them lately. They have a remote resemblance to the cottony cushion scale, but can be distinguished by the fact that the latter has its cottony egg sac fluted lengthwise, while the *pulvinaria* has no such finish, but a fluffy mass instead. Your method of fighting is a good one on a small scale, where the vine is spread over an arbor and easily reached. Another way would be to observe when the small insects are out of the cover and then spray with kerosene emulsion. If this does not dispose of them, take the vine off the arbor this fall, cut back the canes, wash off the cane and stumps with kerosene emulsion and give the arbor a new coat of paint. Ants nearly always attend scales to gather up the honey-dew.

Shall the Mulch Be Stirred?

TO THE EDITOR:—I was much interested in your editorial, "Drouth and Fruit Trees," in the issue of May 7. Is it necessary or desirable to continue the cultivation of the orchard after a good, deep mulch has once been obtained, providing the ground is free from weeds and no showers to make a crust or injure the efficiency of the mulch? Does cultivation of the mulch "bring up moisture"? Is it necessary or desirable to stir up the mulch? If so, how often? The questions refer to land where there is no irrigation, where there is no dew or fog, and a sandy loam soil, water at least 100 feet below surface, climate hot and dry, elevation 2700 feet. We pruned our trees very severely this year, thinning out, but not cutting back. They are all almonds. They are making a heavy new growth and are vigorous and have good color. The rain last week wet down to the ground already moist, and the ground is wet now to within 2 or 3 inches of the surface. Right after the rain the entire surface of the orchard was cultivated and we have now a good mulch and no weeds. There is so much difference of opinion as to the best course to be pursued hereafter that I am very anxious for your advice in the matter. I want to do anything and everything that will help the trees through this season, but I don't wish to spend money to stir the mulch if it does no good.—OLIN L. LIVESSEY, Fairmount.

The perfect pulverization which produces an effective earth mulch does not "bring up moisture." It prevents its escape from the surface, consequently holds it near to the surface, while from hard or coarsely-worked soil it escapes—rising and drying out to a considerable depth. The mulch acts by interposing a non-capillary layer between the thirsty air and the firm capillary surface below. As the moisture is slowly absorbed by the particles of the mulch from the top of the firm layer upon which it rests, it becomes recompact and its capillarity restored. At the same time the upper part of the mulch layer is acted upon by the insensible moisture of the air, and it, too, becomes recompact and en-

crusted, although there may be no showers or apparent dew deposit. Of course, this action proceeds much more slowly in dry interior regions than on the coast or on interior lowlands, where atmospheric moisture is greater; but still there is everywhere a tendency toward the compacting of the mulch layer and restoration of its capillary quality, and as this is accomplished there is a transmission of moisture from the subsoil reservoir to the thirsty atmosphere, and to that degree a loss of moisture to the plant roots. For this reason it is apparent that frequent stirring of the mulch layer to destroy its tendency to return to a capillary condition is necessary to secure the utmost conservation of moisture. Whether this utmost conservation is necessary and profitable depends upon whether the crop absolutely needs it or not. If moisture enough can be retained by preventing weed growth and rapid, hard-surface evaporation, which are, of course, the chief agencies in loss of moisture, then, perhaps, the effort for utmost retention may not be worth its cost, and the orchard may be laid by after securing fine tilth by the last spring cultivation. This is the case in many California localities, especially where the absence of showers and dews and a coarse soil, which naturally resists crusting and compacting, prevail. On the other hand, even under such conditions as these, if the grower wishes to do the best thing possible for the retaining of moisture, he should stir the moisture several times during the summer with a cultivator which is fitted to stir it without bringing the lower, moist layers of the mulch to the top. This stirring separates the particles again and overcomes their tendency to unite in capillary condition, and thus maintains efficiency in the soil mulch.

Growth of Roselle.

TO THE EDITOR:—I received last year from the University seed of the jelly plant roselle. The plants grew very large, but we got no fruit and no jelly. What can I do to get fruit from this year's plants?—L. C., Covina.

Your plants had too good treatment. If plants grow too rampantly, they will fail to form seed pods in time to escape the fall frosts. J. W. Mills, of the University Experiment station at Pomona, who has grown more roselle than any other Californian, says that, if the seed is planted about the middle of May, the plants will produce fruits mature enough to use by the first of October, ordinarily. If it is planted on naturally moist land or is irrigated after it is 2 feet high and there are still no signs of bloom, it produces very little fruit, as the season will not be long enough for it. It will not ripen its seed at any rate. Checking its growth by stopping cultivation and irrigation causes it to bloom and mature fruit early. The ripening of the seed pod does not injure the fruit for culinary purposes further than making the product a little lighter in color. As to growing roselle, plant the seed the same as corn and thin to one plant to the hill, about 4 feet apart each way. The plants will grow from 3 to 5 feet high and from 2 to 4 feet across.

Early Fruiting of Tomatoes.

TO THE EDITOR:—What is the reason the blooms fall off my tomato vines? They are large, thrifty vines, have plenty of water, and are on adobe soil. They bloom well, and the bloom falls off and no tomatoes form.—OLD SUBSCRIBER, Williams.

The failure of the early blooms is commonly supposed to be due to the excessive vegetative vigor of the plant, induced by abundant moisture early in the season. Over-irrigated plants on very rich soil are liable to continue rampant growth and to drop the bloom, and it is quite possible by such mistaken kindness to the plant to induce an immense growth of leaves and stems and no fruit to speak of. Plants for early fruiting should be placed on higher, drier parts of the garden, where they will be apt to make less growth and set fruit earlier. For later fruiting plant on lower, moister land, and, by good cultivation, abundant crops can be grown without irrigation. Where rainfall is scant irrigation is necessary, but water has to be carefully used, so as not to overstimulate the growth of the plants. The earliest market tomatoes come from light, warm soils on hillsides, for in such places excessive moisture is avoided by the free drainage, and the sunny exposure hurries the plants into early fruiting.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 6, 1898.

By W. H. HAMMON, Station Director.

The beginning of June was marked by heavy showers for this time of the year over the northern half of the State. The weekly rainfall was much above the normal along the coast north of San Francisco, and also in the southern portion of the Sacramento valley. No rain fell in southern California. The week was cold until Saturday, when a hot wave prevailed. Except along the coast, the warm wave continued to the end of the week. Notwithstanding the warm weather the average temperatures were below the normal in the great valleys. On the whole, the weather has been good for crops. Some cut hay was damaged, but the benefit to grain and pasture more than compensates for the loss. Hay is in progress and baling will soon take place. Second crop of alfalfa is nearly ready to cut. Wheat has been improved by the cold weather and will fill well. Some summer fallowing is already under way. All fruits are in excellent condition. Grapes setting splendidly. Oranges promise a large yield. Royal Anne cherries are being shipped daily.

TEHAMA.—Small fruit plentiful; some early peaches. Grain ripening; haying over.

GLENN.—Haying over. Harvesting barley will begin soon. YOLO.—Warm wave end of week rapidly advanced fruit, wheat and barley. Apricots, peaches and plums now being shipped; fruit small. Grain harvest now on; crop light. Haying nearly over.

SACRAMENTO.—Weather fair for crops. Helpful rains on June 1st, ending with dry north and southwest winds. Saturday very hot; no wind for irrigating. Hay mostly all cut; will commence haling next week. Grapes growing fine.

SOLANO.—Rain early in the week; no damage. Shipping Royal Anne cherries. Haying finished; only enough for use. Summer-fallowed grain will yield twelve to fifteen sacks per acre; winter-sown will not pay for harvesting. Barley harvested; six sacks per acre. Grain crop will be large. Peaches and prunes doing well.

STANISLAUS.—Begin cutting grain this week; expect a fair yield. Warm weather ripening grain rapidly. Fruit doing well; good crop. Hay all under cover; no damage.

MERCED.—Early peaches ripening; small crop and good quality. Grapes look well. Haying progressing rapidly; light crop. Wheat apparently matured and in no danger from hot winds.

FRESNO.—Cool. High winds keeping fruit back, but no injury. All grapes setting splendidly and promise a good yield; also pears, nectarines and peaches. Yield of hay and grain somewhat greater than expected three weeks ago. Few apricots and some peaches. Vine hoppers all gone.

KINGS.—Good run of water in all the canals and lands being planted to summer crops more extensively than before. Second crop of alfalfa doing well and nearly ready to cut. Young grapes falling badly, but still a good crop. Cold weather improved the grain and it will fill well.

TULARE.—Deciduous and citrus fruits doing well. Hay crop will be short.

KERN.—Grain prospects somewhat improved, previous cool weather allowing grain to fill. Hay crop will exceed last estimate. Cutting grain, hay and second crop of alfalfa.

LAKE.—Continued rain has done much good and some harm. Much hay was cut and most of it will be seriously damaged, and in some places grain is badly lodged. Late crops will be benefited. Extra cultivation necessary in orchards and vineyards. Some summer fallowing. Fruit in excellent condition.

SONOMA.—Haying. Cherry picking and canning; good crop of fruit. Corn, hops and grapes making good growth. Hot northern forced fruit and did damage. Many plums and other fruit on ground; all fruits small and of inferior quality. Prunes developing wonderfully; many trees have to be propped.

NAPA.—Fruit ripening. Shipping cherries. Good hay and grass crop; pasture for local use only.

ALAMEDA.—Vegetables all in. Farmers expect two-thirds of a crop of all kinds except apricots.

SANTA CLARA.—Hot weather injurious to cherries, and may cause other fruit to drop some. Haying; light crop. Sugar beets doing well.

SAN MATEO.—Hot wave at end of week ripened fruit and grain. Haying over. Harvesting will begin early; crop light.

SANTA CRUZ.—Ripening crops will be fair.

SAN BENITO.—Cherry crop light; fruit small. Good prospect for pears. Few apricots. Little hay, but of superior quality.

MONTEREY.—Grain ripening fast. Beets and potatoes doing well. Rain June 1st very beneficial.

SAN LUIS OBISPO.—More hay than expected. Good crop of fruits, berries and vegetables on irrigated land. Cattle, horses, sheep and hogs moved to the north for pasture.

SANTA BARBARA.—Excessively hot weather injurious to summer crops. Beans will not make much of a crop.

VENTURA.—High east winds. Owing to last rain, crop prospects are improved and hills are green. Home-grown alfalfa hay by aid of irrigation is coming into market. Walnuts falling and some damage to apricots.

LOS ANGELES.—Very warm. Hay cut; light crop. Vegetables looking well; citrus fruit looking well, other fruits up to average in quantity and quality. New crop of Navelis fine. Some alfalfa hay mowed. Barley very light; corn looking well.

SAN BERNARDINO.—Warm. Deciduous fruits fair.

ORANGE.—Apricots looking well. Large crop of walnuts and peaches. Corn fields look nicely.

RIVERSIDE.—Cool and clear. Prospects for blackberries and pears good. Harvesting grain and hay; crop light. Deciduous fruits scarce.

SAN DIEGO.—Harvesting nearly over; about one-tenth of a crop of very rich hay. All irrigated crops doing well; also fruits. Little, if any, improvement in the bee interest. Oranges are forming well, and indications for a good crop, especially Navelis. Encouraging reports as to hay from hack country, but yield in hay section less than for years; considerably increased acreage.

LOS ANGELES SUMMARY.—Cool weather early part of week favorable for beans, hay and corn; but hot, drying winds at close junctures. Hot winds blew fruit off trees in localities.

EUREKA SUMMARY.—Copious showers, followed by decidedly warmer weather, have greatly benefited pasture and advanced growth of crops. Strawberries being marketed. Stock in excellent condition.

The following data for the week ending 5 A. M., Wednesday, June 8, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Last Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | .62 | 34.53 | 49.56 | 46.59 | 46 | 74 |
| Red Bluff..... | T | 14.99 | 24.21 | 25.90 | 46 | 98 |
| Sacramento..... | .02 | 10.39 | 17.28 | 20.83 | 48 | 96 |
| San Francisco..... | T | 9.37 | 23.21 | 23.77 | 50 | 88 |
| Fresno..... | .00 | 4.95 | 10.52 | 9.86 | 52 | 102 |
| San Luis Obispo..... | .02 | 7.18 | 20.75 | * | 48 | 98 |
| Los Angeles..... | .00 | 7.08 | 16.86 | 17.30 | 50 | 96 |
| San Diego..... | .00 | 4.97 | 11.78 | 10.37 | 54 | 88 |
| Yuma..... | .00 | 1.66 | 5.35 | 3.05 | 58 | 104 |

* No record.

HORTICULTURE.

Pruning and Thinning.

About three years ago we published a very interesting article on the above theme by Prof. H. Culbertson of El Cajon, San Diego county. A few days ago the same excellent grower of deciduous fruits gave later conclusions in the same line at a southern horticultural meeting, and the paper agrees so fully with some of the suggestions that we made last week that we desire to add its weight to what has already been said.

Principles and Practice of Pruning.—There are two general principles of pruning that are important and easy to remember. First, very short pruning produces a vigorous new growth; second, very little pruning gives short growths.

The above refers to pruning when the trees are in a dormant condition. All trees when set out should be cut back to 12 and 16 inches from the ground, and do not be tempted to leave any branches, but leave the tree clean and free to start new. Generally the new growth should be cut back each winter from one-half to two-thirds of their length each pruning. This refers to all growths that are likely to make main branches. When the main branches are cut back, it is a good plan to cut all small growths entirely off in pruning the first and second winters. After this the patch may be allowed to bear some fruit, and a part of the small growths may be allowed to remain. These small growths bear fruit one year and die, and should be cut out at the first pruning after they have borne. After seven or eight years the growths of the main branches will become very short. The pruning will consist mainly of cutting out the twigs that bore fruit the previous year. Second, thinning out the twigs that will bear the following year, taking out more than half of them; third, cutting back one-half the length of the remaining twigs.

Location of Fruit Buds.—The latter will depend on the location of the fruit buds. If the fruit buds are mainly on the outer end, this part of the pruning will have to be omitted. This is the condition of shy-bearing varieties. Heavy bearers, like Early Crawford, Foster or Elberta, will have plenty of buds after one-half of the twig has been cut off. The object being to aid very much in thinning the fruit, as a twig is much easier to cut off than pulling off a half dozen peaches.

The nectarine and almond bear their fruit very much in the same way, and should have about the same treatment. The apricot bears its fruit more on spurs or small-bearing twigs, which live more than one year. When these show any sign of weakness, they should be taken out to allow others to come in their places. The better time, perhaps, for cutting back the longer growths on the apricot is about the first of August, giving them a good irrigation at the time, which develops the buds for the next year in better shape than any other way. This time of cutting back is only recommended after they have reached bearing age. When it is the business of a tree to grow, let all pruning be done in the winter.

Apple, Pear and Prune.—The apple, pear and prune bear the most of their fruit on short spurs. As long as the trees grow very fast, these spurs are not formed very fast. A stunted tree will produce them early and commence bearing early. Nearly all of this class of trees bear their first fruit on the ends of the branches, especially the apple and pear, while the prune bears its first fruit on small branches or twigs; the Bartlett pear, especially, keeping up its bearing mainly in the ends of the branches for a number of years. It forms spurs very slowly. For a few years the formation of these spurs should be encouraged. Never remove them for the purpose of giving the tree a smooth appearance, as is frequently done. To the well-informed fruit grower these spurs are things of beauty, because he sees beauty through their utility. But there comes a time when too many spurs grow. The main growths on the trees become very short, or none at all. Judicious pruning will cut some of them every year. If a tree has a large supply of them and the growth of the tree is about stopped, the best thing to be done is to cut out at least three-fourths or more of them, or, if very much stunted, cut them all out. A new, healthy growth will then take place. In all trees there is more or less thinning out to be done every year. After the bearing age is reached, the criterion should be: cut out or back enough every year to get a strong, healthy growth. Otherwise the trees will be short-lived.

Thinning.—The thinning of fruit is equally as important as pruning. First, to prevent over-bearing and thus weakening the tree, which is generally followed by a great crop every alternate year; second, to get large, marketable fruit, or, in other words, grow a crop that has some money in it.

A good principle to remember in this connection is that a fruit 3 inches in diameter is eight times the size of one that is only 1½ inches in diameter. It is no

uncommon thing to have a fruit that will weigh twelve to sixteen ounces each; it is also very common to have them only one or two ounces. The ordinary crabapple only weighs about one-fourth of an ounce, or over sixty to the pound. In connection with this, it should be remembered that in stone fruits it takes as much of the valuable mineral elements from the soil to produce the pit as it does the flesh.

Generally speaking, fruit that is not thinned well will scarcely pay the expense of handling. The grower becomes discouraged, the buyer does not want it, and the consumer will only pay a small amount for it. The nice fruit is a delight to the grower, is sought for by the buyer. The consumer is pleased. It is a happy combination all the way through. The dried fruit will bring from \$20 to \$60 per ton more than the small unthinned.

There Are Many Methods of Thinning.—One man says the best method is to take off all that is in sight. Many depend on the eye, thinning until they think it looks about right. Generally, however, this cannot be depended upon. Another way is not to have two fruits nearer than 4 to 6 inches. The method we favor most is, for peaches, viz.: After the trees have been well pruned, leave only two peaches on a twig one-eighth of an inch in diameter, three or four for one that is ¾-inch in diameter. It is the rule under irrigation; without irrigation, only one-half the above, unless it is quite moist land, which would be as good or better than irrigated. Or, in other words, so prune and thin that the trees will get a good healthy growth every year. Under these circumstances, they will bear good crops every year, other things being favorable. The tree will be long-lived.

Thinning the apple, the ordinary rule is, after the tree begins to bear full, only leave one apple to the spur, or one in a place where ordinarily there would be from three to five. All should come off but one. Very small-growing apples, like the crabs, would not come under this rule.

The prune often needs thinning to give good, fleshy fruit. Prune trees that overbear have so many of the dried fruit that is only skin and seed that they are very unsatisfactory to have anything to do with. Thinning is the remedy for these ills.

As fruit becomes plenty, the good fruit is the only kind that is sought for. Small dried fruit comes in competition with every cheap thing in the market. Large, fine fruit has but little competition in the market and meets with ready sale at fair prices.

Southern California Orange Interest.

The importance and the outlook of the orange product of southern California is described by E. F. Howe in the *Covina Argus* of May 23th. Mr. Howe is considered one of the most conservative and reliable writers in southern California.

This Year's Crop and Its Value.—It is now evident that the orange shipments will reach 13,000 cars; and, taking the average auction prices of each month as the average selling price of all fruit shipped that month, the prices realized for the 10,858 carloads shipped to May 1st indicate that the receipts for the entire crop being harvested will aggregate, on an f. o. b. basis, \$5,460,000. If 25 per cent of the freight charges be credited to labor, the total industrial value of the orange crop will be about \$6,450,000. More complete details will be available at the close of the orange season, but reference is here made to this matter because an effort is being made to discredit the importance of the industry.

The Next Crop.—The latest effort made to cast doubt upon the industry is the claim that the next crop will show a decrease, due to the drought and the dropping of settings. There is absolutely no basis for this claim. Every year one hears more or less complaint of the dropping of orange settings, but every year it is found that an amply supply has remained on the trees. While it is a fact that economy in water is being practiced, there is not a section of southern California in which any considerable number of trees are suffering for water. Inspection of a large number of orchards warrants the assertion that there is no reason why the crop of 1898-9 should not show a normal average increase over that of 1897-8. Just what a normal increase may be is another question; but remembering the fact that a vast acreage of trees have borne their first fruit during the past three years, it would seem a reasonable supposition that an increased yield of 25 per cent might be anticipated. On the basis that the yield of the past year reached 14,000 carloads, of which 1000 were wasted on account of frost, it may fairly be claimed that, barring accidents, southern California can be depended upon to produce from 17,000 to 20,000 carloads of fruit in the season of 1898-9. The last season has shown an increase over the preceding one of 52 per cent. It is not thought possible that the percentage or increase will be so great the coming year, but the estimate of 25 per cent is considered conservative. This will carry southern California to a yield of one-half of the prospective maximum yield of oranges from the trees now in the ground.

THE DAIRY.

Evolution of the Dairy in Kern County.

How dairy science and enterprise triumph over obstacles and transform unfavorable conditions into means of advancing industry, is clearly shown in the record of dairying in Kern county as laid down by J. M. Hunter in the *Bakersfield Californian*. Mr. Hunter is himself a dairy farmer and knows of what he writes.

The Beginnings.—Although dairying has been carried on to a considerable extent for many years, it has usually been in the crudest manner or as an adjunct to the business of stockraising and never with the least realization of the vast possibilities for successful dairying as an independent industry.

Some fifteen years ago some of the large stock-raisers attracted, no doubt, by the distended udders of the half wild cows on the succulent alfalfa fields, conceived the idea that there was more milk than the calves needed and that the surplus would make dairying pay. So a few cheap sheds were built and somebody who have been a good hand with cattle was put in charge of the dairy department. It was too much trouble, if not well nigh impossible, to break the cows who were not far descended from "Arizona's," so stout corrals and chutes, long box-like affairs, just large enough to squeeze in one cow after another, were built. Then with a whoop and hurrah the vaqueros would run in the cows. Through a hole in the side of the chute the cows' hind legs were tied and the Chinese or Swiss milker proceeded to jerk what milk he could from the frightened cow.

If a cow showed extra milking qualities and was gentle she was used as a calf cow and made to suckle two or three calves. Three or four months were considered as long as it was profitable to milk a cow and then she was turned out on the range until the next season.

Unfavorable Climate.—As the summers were hot and there were none of the modern appliances for cooling milk or making butter it was, of course, difficult to make or market a first-class dairy product except cheese, of which large quantities were shipped out even under such difficulties. Winter dairying would have been very profitable even then, but the idea of having fresh cows in the fall instead of following the natural order and having the flow of milk in the spring seems never to have occurred to the projectors of the enterprises.

So the large dairies were abandoned. It was offered as an excuse that Kern county was not a dairy country, that it was too hot in the summer and that the alfalfa tainted the butter. Various other absurd reasons were given. Some of the smaller dairies kept pegging away, "making about enough to pay the running expenses of the ranch," was the way one of the most successful in the business once expressed it.

Better Conception of the Condition.—The last few years have witnessed a change. Modern methods and appliances have forced themselves upon the business. Better dairy stock is being bred. New people with new ideas are coming in and there begins to awaken a proper realization of our vast possibilities in dairy forage and climate.

The first and all important question in successful dairying is good forage substance, for, however, valuable and necessary an artificial ration may be, none has ever been concocted which equals natural green fodder, and long experience and chemical analysis has shown beyond question that alfalfa can not be equaled as a forage plant either in the quantity produced per acre or in the chemical constituents necessary to a good dairy ration. For grazing, alfalfa, irrigated at the proper times, furnishes a succulent forage rich in protein, fresh and green from the first of March to the middle of November, and will, if a good stand, easily support two cows per acre during that period. Although it has yet been used as a soiling crop, that is cut and fed green, in Kern county, experiments have amply demonstrated that it is unexcelled for that purpose, as it can be cut seven or eight times during the year and yields enormously at each cutting.

Cut in this way a good stand of alfalfa will last fifteen or twenty years without re-seeding. Cured for hay it produces six to eight tons per acre and excelling for milk and producing qualities either red clover or oats which are valued so highly in the Eastern dairies.

A Closer Study of the Climate.—Next to the forage question in dairying is that of the climate. In that respect Kern county is more than favored. Refrigerating machinery has made it possible for the butter maker to produce any desired temperature at any time, but nothing has yet been invented that will keep the cow who produces the milk comfortable and in the yielding spirit at all times. This Nature has done as nearly as possible here.

Every dairyman knows that cold rainy days cut down the flow of milk and that no matter how hot it may be if the cows have good shade and water there is no loss of milk. In the East the great problem and item of expense is keeping up the flow of milk

in the winter, and in many of the New England states dairying must cease entirely during that season. Kern county has less rainfall and more sunny days than most localities, even in sunny California. Expensive barns are wholly unnecessary, as there is scarcely a night in the year that cows can not lie out in comfort. It is indeed, this feature of a delightful winter climate that will place us in the lead for the dairy products at a season when prices are everywhere the highest. A little care in breeding and every cow may be fresh in September. A little foresight in irrigating and there can be green feed equal to June grass. There is usually neither frost nor rain until December. There are few flies to bother the cows and the calves get a good start equal to those dropped in the spring, in short everything is favorable to a production equal to June in the East.

Coast vs. Interior Valley.—What is more important is that this is the season of a rising market for all dairy products both in California and in the East. This brings us to the last and most important phase of the dairy industry, viz.: markets.

In the early days when Nature followed her own sweet will and the cows were all fresh in the spring; when the mountain ranches sent down great loads of butter which must go at any price; when the Coast dairies, dry for four or more months of the year, were producing to their full capacity; when the local product went begging, then dairying was a failure in Kern.

But things are changing now. We are beginning to realize that we can dairy successfully when the once famous Coast dairies are dry; when the cows of the great Central States dairies are eating dry feed and wading in the mud, and New York and Vermont cheese vats are frozen solid our cows are luxuriating in green feed and sunshine.

The Product.—So far the local markets have consumed almost all of the butter produced, but successful shipments are being made to San Francisco and Los Angeles. Large quantities of excellent cheese have been shipped to San Francisco and Arizona for some years, but the local demand has increased to such an extent as to consume most of the present product. The local demand has been supplied by small dairies, but in 1896 a large creamery, the Bakersfield Creamery, was built, and it now manufactures a large amount, making a splendid article of uniform good quality and in condition for shipment. The only other creamery, the Rosedale, consumes the milk of about 150 cows and turns out a superior quality of butter which recently scored 96 points at the Dairymen's Union in San Francisco. The Bakersfield Creamery is fitted with refrigerating machinery and has effectually disposed of the old bugaboo of "too hot to make butter in Kern county."

The Needs.—The only things now needed here to made dairying the most profitable and leading branch of agriculture are more intelligent attention to the details of the business, better dairy cows and more of them. A growing realization of what can be done here and a coming into competition with outside markets are awakening attention.

Babcock testers and a few specialists in breeding are improving the dairy qualities of the cows and the present dry year, which has been so disastrous for the unirrigated coast counties, has brought us several hundred head of cows many of which will remain here permanently.

THE IRRIGATOR.

Irrigation by Flume and Furrow System.

By A. S. BRADFORD, before the Fullerton and Placentia Farmers' Club at its meeting in Fullerton.

There are three systems of irrigation in use—blocking, flooding and furrow. What I consider the best, cheapest and most practical way of irrigating is the flume or furrow system. In fact, it is about the only way of irrigating practiced in the upper valleys. The first thing to be considered is getting a flume put in properly, as this alone will cause much trouble if not done right.

Running the Flume.—A flume should run nearly on a level, by having the bubble in the level slightly toward the head or entrance of the flume. It should be placed about two-thirds in the ground at the commencement, and, as the flume will go on a level, as soon as it comes out of the ground to about two-thirds of the height there should be a drop made of 1, 2 or 3 inches if necessary, and then carried along as before, so as to keep the entire length of flume on a level.

Building the Flume.—The size of the flume should be made at the entrance 2 feet wide for the first length—the general length used is 16-foot lumber—the next several lengths at 18 inches, then reduce to 16, 14, 12, 10 and 8 inches. This should be regulated by the length of the flume to be put in. The sides of the flume should be of 8-inch lumber throughout, nailed to the side of the bottom, making 7 inches high inside. This size will carry about 75 inches of water. Reducing the flume in size and

keeping it nearly on a level will give you the same pressure throughout. This is very important in regulating the streams.

The sections of flume should be joined together by placing a 2x3 under at the joint, so as to nail the bottom down tight; the same on the sides and top, so as to form a collar around the joint. Two-inch holes are none too large, in order to keep them clear of trash, such as leaves, etc. By lifting up the slide of the gate it will wash out. I generally shut the gate down the thickness of my finger. In this way each gate can be regulated very nicely.

The Furrows.—For young orchards, 24 feet between the rows, I run nine furrows. On my older orchard, nine years old, the limbs are well down; I run eight. I have an extension made for my cultivator to bolt on each side and use four plows. With this extension I can wet the whole ground thoroughly. The furrows will extend under the limbs of the trees, and by making a slight curve around each tree the ground will become wet in the rows as well as between.

The streams should be run very slowly on the most of our soils. I will treat on the hard soils first. A great many failures have been made with flumes by running the streams too large and getting the water to the lower end quickly and then reducing it. This way seems to slick or cement the soil so that it will not take the water, and the consequence is a poor and unsatisfactory irrigation. On the other hand, if the streams are started small and allowed to soak the ground as they go along, it is simply astonishing how much water can be put in the ground. On sandy soils the streams should be longer. A little practice would give any one the desired information.

About three lower rows of trees should be blocked up, provided one has no place where the water could be wasted. This last is the best, as there would only be about 10 inches of water to waste the last three or four hours, and a thorough job would be done from one end to the other.

Compared With Block System.—This way of irrigating makes the soil light and loose and never bakes, while the system of blocking packs the soil hard and makes it lifeless, and it will not remain in a state of moisture near as long as the furrow system.

The Cost of Each.—Besides, to those who wish to economize, as we all do, one season will nearly pay the cost of the flume in labor in making ridges and men to irrigate, only one man being required with a flume; and this is easy work—that is, if your flume is right. Two horses will furrow out ten acres in half a day, and a little hard labor at the flume will connect the furrows. In the blocking system generally a disk is run first where the ridges are to be made, and then the ridge is run with four horses; then the locally called "go-devil" is run to stop up one side of the blocks; then ditches must be made; then from two to three men to handle 50 inches of water by shutting up the blocks when filled. Then the ridges must be plowed down before the ground can be harrowed and got in condition to cultivate. At a glance one can see that it costs fully three times as much to irrigate in the blocking system as in the furrow, and the soil acts more as it does after a rain.

The flooding system is by running the water over the surface by ridging one way or blocking, and then breaking one block into another, and so on through the rows. This way will not wet deep enough to be of much good and is not practiced by any successful horticulturists. In some instances this method has to be adopted, however, to get the surface in proper condition to work and otherwise irrigate.

I have used the flume for six years and never have had a leaf curl on my orchard, and I irrigate about four times in common seasons.

Another thing I will add—the lumber for a flume should be soft redwood. The common lumber is generally so, but the so-called flume lumber is hard, generally, and will warp the flume out of shape. Even in the common lumber hard pieces will be found, and these should be avoided.

THE FIELD.

Wheat is Too Low.

Major J. D. Peters tells the Stockton *Mail* that the present price of wheat is too low, and he bases his statement chiefly upon the fact that there is not enough wheat in sight in California to furnish seed for the next crop. He states also that during the past month milling wheat has been shipped to Stockton, until now there are about 20,000 tons, whereas a month ago there were not more than 18,000 tons. Last week, he says, from 600 to 800 tons of wheat were shipped here from Oregon. Sonora wheat, he says, will be needed for seeding, and it is not in sight in sufficient quantities.

He is of the opinion that the prospective world's crop of wheat should not tend to lower the present price, as it cannot be definitely known at this time what the crop will be, and in any event Argentine

and Austria will not be heard from in the market until next January.

"After summing up the situation," concluded Mr. Peters, "I am of the opinion that wheat is too cheap at the present price, especially in view of the fact that available ships for cargoes are due here when we need them, and freights will go down from 30 shillings—the present price—to 26 shillings. Yes, sir, wheat is too low, and I haven't any wheat, either."

METEOROLOGICAL.

The Influence of the Japanese Current Upon Pacific Coast Weather.

It seems that the common notion about the influence of the Kuro Siro or Japanese current upon our coast weather needs reviewing in connection with other wider-reaching phenomena. The *Monthly Weather Review*, published by the U. S. Weather Bureau, makes some editorial comments upon the subject.

Popular Impressions Incorrect.—It would require a learned antiquarian to collect all the popular meteorological errors that have been started from time to time and that are still afloat in some part of the world, like derelicts on the ocean. It is not so very long since Professor Loomis demonstrated the error of those who maintained that there is a specific equinoctial gale or storm that reappears every year. We are even now just emerging from the influence of a century of delusion relative to the idea that forests produce rain and that agricultural cultivation of the soil produces drouths. We have just, within twenty-five or thirty years, obtained a clear conception of the warm, dry, descending winds when, lo! a new error with regard to them appears. A century ago it was rational to inquire whether the Gulf Stream had any influence on our own or European weather, but now we know that if it has any, it is at least inappreciable in comparison with the general influence of the ocean. Similarly in the case of the Japanese current, or Kuro Siro, which is to the Pacific what the Gulf Stream is to the Atlantic, we have now from Montana a new query as to its action in forming chinook winds. A first glance at the map of the world must arouse in the mind of a rational person grave doubts as to whether the chinooks of Montana come from the Japan stream. This latter is fully 6000 miles distant. The winds that blow over it form a part of the general circulation of the Pacific ocean; eventually, they get into a whirl around the great depression in the North Pacific ocean in the neighborhood of the Aleutian islands. The rain and fog in this region and on the coast of Alaska, British Columbia, Washington and Oregon are demonstrably due to the evaporation from the Pacific ocean as a whole and to the fact that the winds are rising up over the Rocky Mountain region.

Japan Current an Effect Not a Cause.—The Japan current, properly so-called, is due to this circulation of the winds; the winds are not due to it. Each square mile of the Pacific ocean has a slight influence on this circulation, but the Japan current does not occupy 1 per cent of this area. The mere fact that the westerly winds are rainy and cloudy on the Pacific coast but are warm and dry in Montana suffices to show that they have undergone a change in passing over the mountains and that the main features of these winds are due to something that takes place in the Rocky Mountain region and not on the coast of Japan.

The map of the winds over the North Pacific in the winter months shows a powerful and prevailing cold, northerly current flowing from the interior of Asia over Japan south and southeastward, most of which then turns to the southwest over the Philippine islands into the Indian ocean. What little passes over northern Japan and eastward to the middle of the Pacific ocean then turns northward and returns in its circulation around the Aleutian area of low pressure. Not one part in 10,000 ever reaches Montana.

Our Southwesters.—On the other hand, the southwest wind of our Pacific coast can easily be traced a little farther southwest and then southerly to the Hawaiian islands, being a part of the circulation around an area of high pressure whose center lies a little southwest of San Francisco and northeast of Hawaii. These two systems of winds circulating about the highs and lows on the Pacific represent only what is going on at the very bottom of the atmosphere. If we go up 15,000 or 20,000 feet into the region of the upper cirrus clouds that float over all this part of the globe, we shall find them all moving from the west, or between northwest and southwest. It seems likely that a slow process of interchange takes place between this highest stratum and the lowest stratum. In this process the air within the areas of high pressure has a general descending tendency, that is to say, it is drawn from the upper level or that of the cirrus clouds, while the air within the areas of low pressure has an ascending tendency, and eventually reaches the level of the cirrus clouds. But these general tendencies upward and downward

require considerable time; it may be days or weeks or months, according to circumstances, to complete an entire circulation for any given particle of air. In the course of this long period any given cubic foot of air may be dispersed in all directions, some of its particles going northward and some southward, some ascending and some descending, until it is so dispersed that it would be impossible to trace the air that forms a chinook in Montana backward to any given region 500 miles away.

Rain in the Hawaiian Islands.—Our correspondent, Mr. Curtis J. Lyons, in his report for March states that "the month has been an unusually rainy one throughout the group. Kaumana, near Hilo, Hawaii, reports 55.58 inches; 10.18 inches fell at Luakaba, Oahu, five miles from Honolulu. On the 24th unprecedented floods did much damage, especially in Oahu and Kauai; heaviest rain on north side of Oahu on the 27th. Frequent thunder and lightning from the 12th to the 24th."

A study of the general circulation of the atmosphere leads to belief that the conditions that bring drouths or floods to the Indian ocean, Asiatic coasts and Australian regions move slowly eastward over the Pacific and are eventually felt in North America. We shall, with interest, look for a rainy season at some time following these floods in the Hawaiian islands.

TRACK AND FARM.

More About French Coach Horses.

The exhortations to farmers to get into the line of producing coach horses of the French type continue. At the recent convention of horsemen in Chicago, John B. McLoughlin of Columbus, Ohio, read a paper on this subject.

What Americans Have Done.—At the present time in America the greater number of mares used for breeding purposes are either of unknown breeding or if known the knowledge is of little value for the reason that the blood of the ancestors is of miscellaneous origin. There has been in this country during the last thirty or forty years an effort to improve our stock of horses to some limited extent. This effort has been made to produce two types of horses differing from each other to the most radical extreme, viz.: the American trotter and heavy draft horse. The origin of these breeds is European. The American trotter, although he has been brought to his high state of perfection in America by our own breeders, is a direct offspring of the English Thoroughbred. The heavy draft horses in America are a European product pure and simple. As it were, the breeds of England, France and Germany have been transplanted into this country. Although there have been many mares imported, yet the most common practice has been to continue to breed grade mares to pure-bred stallions, in this way getting deeper and deeper in the blood until the fifth top cross is so near the original breed that in most stud books it is eligible to registry.

Why so Much Draft Horse.—Why American farmers and breeders have confined themselves to these two breeds of horses is unexplainable. In other countries, especially in Europe, horses are raised for special purposes more than here, and these separate and distinct breeds are the result of long years of patience and perseverance in selecting stallions and mares for breeding purposes that most nearly conform to the type desired. The horses of Europe might be placed in four classes, viz.: heavy draft horses, which are used for hauling heavy loads at a slow rate of speed; coach horses, which are used by the rich people of those countries for pleasure; cobs and ponies to hack about with, and Thoroughbreds or race horses. Of all these different breeds of horses the one most neglected in this country is, and always has been, the coach horses. Americans are active, industrious and impatient. We want to see things move rapidly, and a slow, ponderous, heavy draft horse hardly seems compatible with the American instinct. Of all the breeds of European horses the coach breeds, I believe, are actually the most admired here.

Points of the Coach Horse.—The very perfectly proportioned horse, about sixteen hands high or a little more, weighing about thirteen hundred pounds, with a long neck, carrying an intelligent head gracefully, with sloping shoulders, straight back, round ribbed, close coupled and with long quarters, standing on perfect feet and legs, with bone and muscle like a Thoroughbred, is the ideal coach horse standing still. He is handsome; he is superb. With his easy, graceful motion, and his grand and lofty action he is admired by all and captivates those who have a natural instinct for the noble beast. It is unfortunate that there have not been more of these horses imported to America. Our breeders of trotting horses seem to have suffered the draft horse to come here unmolested, thinking perhaps that he did not conflict with their interests, but they seem to have a bitter hatred for coach horses. A man in the country who owns a trotting stallion will do all in his power to keep a coach stallion out, because

he does not enjoy the competition of a really excellent horse that on ordinary roads, hitched to an ordinary conveyance, can trot fully as fast, and along with his speed has so many other desirable qualities which have been so sorely neglected by our breeders of trotters. The ambition of our trotting-horse breeders has been and is to produce a horse that can be taught to trot a mile on a perfectly smooth track, hitched to the lightest sulky with the lightest harness in the shortest possible time. There has been no effort whatever made to cultivate any other quality, and many of the most noted specimens of the breed are not only not graceful in their appearance, but are not sound. They excel in the one point of extreme speed, but in nothing else. They are anything but coach horses.

How to Breed Them.—The practical way to produce coach horses in this country is to carry out the plan by which we have developed our different breeds of draft horses. Since this branch of the horse business has been most neglected it will be the most profitable for those who undertake it at this time. The good road mares (trotting-bred mares if you please) should be bred to a pure-bred coach stallion and the mare colts form this cross should be again bred to a pure-bred coacher, and in that way we can in America take advantage of the results of long and patient efforts made in Europe to produce a breed of horses the finest in the world. The truest patriotism is not to think that we are perfect, that what we have is perfect and to allow ourselves to be misguided by prejudice, but it is to see our own shortcomings, recognize the excellent results obtained by others and take advantage of their work, and in that way we will excel in the end.

Good on the Farm.—The best is none too good for the enterprising American farmer and breeder. There is no better horse in the world to use on the farm than the coacher. He is large enough to do any kind of farm work. He is active, strong, hardy, docile, and intelligent; an ideal horse for the various kinds of work to be done by the farmer's horse. He can plow or he can travel on the road at the rate of ten miles an hour. The farmer who raises this kind of horse, however, will have the greatest temptation to sell, for some horse buyer will see him and will offer such a high price for him that the farmer will probably sell. This is the kind of horse that the rich dwellers in our own cities are seeking for (at the present time in vain) and for which they are paying many hundreds of dollars for single individual horses when they can be found. This is the only kind of horse that it was profitable to raise during the past few years of depression in the horse business.

For Export.—There has been developed during the past few years an enormous export trade which once started will never stop. Horses are worth from three to five times as much in Europe as in this country. There is no kind of horse so much sought after by foreigners as the coacher, for which they are willing to pay the highest price. Foreign buyers are most anxious to buy such horses as they have at home and the farmers and breeders who patronize imported stallions, especially those who breed to French Coach stallions, will produce the greatest number that will be exported. We are all seeking to produce the best. The aim of all Americans is to be at the top of the ladder, and that in horse-breeding is represented by the coach horse.

Government Mules.

A statement sent out from St. Louis under date of May 28 reads thus: "Lieut.-Col. Smith, Assistant Quartermaster of the United States Army, received instructions from Washington to buy mules suitable for the use of the army, without limit. He at once notified the traders at the yards, who wired their buyers to round up all mules that would do for Government service and forward them at once to this city. The purchases of mules by Col. Smith in the last six days have amounted to \$972,960.24, while since May 1 the daily expenditures have been nearly \$100,000. Some difficulty is experienced by buyers in securing mules, as farmers and breeders are holding them for higher prices; but the price is not apt to go up very much, as the Government has fixed a price as a limit and it will not go beyond this."

FORESTRY.

Forest Endowment of California.

Prof. J. G. Lemmon the well-known California botanist gave some very interesting facts about our resources in genera and species of trees in the course of an address before one of the Oakland schools. We collate the following leading statements:

More Kinds of Trees Than any Other Equal Area of the World.—The little, narrow strip of territory stretching along the western coast of North America, 800 miles long by 150 miles wide, and known as California, is peculiar in many ways, and in none of them more marked than in its forest wealth. This forest possesses the most kinds of species of trees of any equal area in the world; and these trees are

either the largest in dimensions or they bear the circumstances that give to the phenomenon the appearance of a distinct endowment. Omitting the broad-leaved trees, there are forty-three species of evergreen or resinous-wooded, cone-bearing trees in this little State. Of these twenty are pines, six are spruces, five are true firs, two are redwood, two are American cedars, five are cypresses, three are junipers and two yews.

Our Pines.—Of these trees two of the pines are the largest trees of the family, often attaining a height of 300 feet with a diameter of 15 to 20 feet. No pine of any other land attains half of these dimensions. Four of our pines bear longer or heavier cones than are found abroad, the cones of the sugar pine being often 20 to 24 inches long and that of the Coulter pine often weighing 10 pounds. The longest cones outside of the State scarcely exceed 6 inches and the heaviest weigh but one pound.

Spruces and Firs.—Two of our spruces attain enormous dimensions. The Douglas spruce of the Sierra becomes 400 feet high with a trunk 12 to 15 feet in diameter. The great tide-land spruce of the coast is but little less in dimensions. Two of our firs become twice as large as any fir in foreign countries, 300 feet high and 12 to 18 feet in diameter, and their cones are 6 to 8 inches long, while those of the old world are but 2 to 4 inches.

Other Trees.—Our world-renowned redwoods, rising to a height of over 400 feet and enlarging while yet young to a diameter of 30 to 40 feet, with a life of 3000 to 5000 years, are not approached by any vegetable growths elsewhere.

There is scarcely a genus of trees found in the northern hemisphere that is not represented here, and the few that are limited to other regions are mostly small trees or they produce diminutive cones.

This prodigality in numbers and sizes extends to other growths. Our oaks are numerous and immense, with monstrous acorns and acorn cups. Our maples bear leaves 6 to 8 inches across.

Why so Well Endowed?—Why this great prodigality of Nature in behalf of little California? Why is such a narrow slice of this far western, almost unknown, world so richly endowed with matchless creations?

In attempting to answer this great query we must carefully examine the location and configuration of the countries where these trees are found or where from present outward appearances it would seem that they ought to be found flourishing as well as here in this limited region.

And first we must observe an impassable barrier that is set up by nature in the matter of distribution. The torrid zone in which no resinous-wooded trees can grow, except on highest peaks, separates the world's forests into two generally very different kinds.

All the species of trees mentioned in a preceding paragraph are found only on the northern hemisphere, but the distribution of them is so peculiar that no examination for causes is demanded.

Trees of the Other Regions.—The northern part of the eastern continent, or Eurasia, is approximately 9000 miles across; North America 3000 miles. One would naturally look for three times as many pines in Eurasia as in America, but just the contrary is the case. Of the eighty species of pine, twenty are indigenous to Eurasia while sixty are in North America.

Again, the Pacific slope is 1000 miles wide, one-third of America, but it has forty pines. Of these fifteen are all in Mexico, twenty-five in northwest America and the whole number of species of pines in the world is eighty.

Eurasia being 9000 miles across and North America 3000, Eurasia would seem to be entitled to nine-twelfths or three-quarters of the number—sixty pines, while North America should have twenty.

Again, the Atlantic slope is 2000 miles across while the Pacific slope is 1000, the former being entitled to two-thirds of twenty pines—thirteen and one-half species, while the Pacific slope had six and two-thirds species. California being about one and one-tenth of the Pacific slope would be entitled to 1.10x6 $\frac{2}{3}$ or about one-half a chance to get one species!

As a matter of fact, Eurasia has but twenty pines to North America's sixty, and of these American pines the Atlantic slope has but fifteen, while the Pacific has forty-five, and of these California is the possessor of twenty.

This little favored strip of the new world then is endowed with as many pines as all Eurasia, and four of them outclass the world's best efforts.

Here right at home we find the paradise of this world, south of the great well-watered forests of the famous Puget Sound region in the coming empire of the west, the land of the big Sequoias, the sugar pines, the Douglas spruce, the fog frequented and sun-kissed mountains of California.

In Germany, molasses used as fodder for milch cows, says the *Sugar Beet*, is now again shown to be an economical and desirable product. The best results are obtained when the residuum has been sufficiently diluted, fed alone, or combined with beet pulps. When with potato pulps the animals do not eat it with the same avidity.

AGRICULTURAL REVIEW.

CALIFORNIA.

Butte.

BIGGS CANNERY.—Notes, June 4: It should be remembered that Biggs has the best equipped cannery in the northern part of the State. We are authorized to state that it will run full-handed for the usual term of five or six weeks, and that the necessary fruit will be procured, no matter what the cost may be.

GRIDLEY CANNERY.—Herald, June 3: E. B. Knight, formerly connected with the cannery in Marysville under Mr. Skinner, has concluded arrangements whereby he will operate the Gridley cannery under a lease the coming season. There is sufficient fruit remaining thereabouts to make quite a run.

Fresno.

ANOTHER RAISIN SEEDER.—Expositor, May 28: An extensive raisin warehouse and seedling plant will be erected at the corner of San Benito and G streets by the Porter Bros. Company. The plant will rank high among institutions of this kind in the valley. Its exact dimensions have not been agreed upon as yet, but the work will be pushed to completion. The plant will be ready for operation within sixty days. Charles G. Bonner will have charge of the plant.

POTATO GROWING.—Reedley Exponent, June 2: As an instance of what can be done in raising potatoes, W. H. Graham brought a sample. The potatoes were taken from one hill, numbering five in all, and they were of a nice size, smooth and beautiful. Mr. Graham has quite a patch, which will no doubt yield equally as well. With careful attention and a little extra work, potatoes could be grown as well as wheat in this section wherever irrigation is possible.

Kern.

STREET SPRINKLING.—Bakersfield Echo, May 26: Supervisor Jastro has ordered from San Francisco a four-horse sprinkling wagon with gasoline engine and pump attached. This will be for use on the Rosedale road. He proposes to bore 10-inch wells by the roadside, about a half mile apart. Driving up to a well, the engine, mounted on the rear of the wagon, will be started up and the tank soon filled. This plan has been in operation in Tulare, Santa Clara and some other counties with general satisfaction.

FIRST WHEAT.—Californian, June 2: The first carload of wheat to be shipped to market from the State of California was consigned to D. Miller & Co. of Stockton by O. B. Phelps, the veteran buyer. The grain was grown by J. B. Lawson on the Tejon ranch, near Rock Pile.

Los Angeles.

ARIZONA HAY.—Pomona Progress, June 7: Capt. A. D. Thatcher is now in Tempe, Ariz., and up to the present time fifty carloads of hay have been received from him, and Fred H. Thatcher is handling it at this end. It is conceded to be the best quality of hay ever received in the Pomona markets. The best wheat hay is selling at \$20 per ton in carload lots, while alfalfa is several dollars a ton cheaper.

Monterey.

SECOND CROP CHERRIES.—Salinas Index, June 2: In the orchards of J. Harris and I. M. King the cherry trees, which were already heavily fruited, have put forth a second crop. The first crops are ripening; in fact, many of the cherries are already ripe, yet on the same branch are numerous smaller cherries not larger than fair-sized green peas. They literally cover the tree, the branches of which are bending under their load of fruit. The productions of the trees will be something enormous, and with their fruit in all shades of color and of all sizes, make a wonderful sight.

Riverside.

THE WATER SUPPLY.—Press, May 28: While reports of a shortage, which in some localities threatens the life of the trees themselves, come from every other orange-growing section south of Tehachapi, a canvass of the situation in Riverside reveals the fact that every day there is going to waste in the wash from 300 to 700 inches of water. Not only has every order for water been filled, but there has always been water to spare. There are approximately 13,000 acres of land under cultivation, according to figures furnished by the county assessor, in the corporate limits of Riverside. To water this area we have 3200 inches of water in constant flow. Of this amount the Riverside Water Company furnishes 2700 inches and the Gage canal 1500 inches. This gives every improved acre of land in the valley 4-16 inches of water in constant flow.

Sacramento.

HORTICULTURAL COMMISSIONERS.—Bee, June 6: A petition from fruit growers was read at the supervisors' meeting, asking that a county horticultural commissioner be appointed to supervise the destruction of noxious insects. A communication signed by O. O. Goodrich, Thos. Oats and Geo. H. Cutter was read, offering to serve as horticultural commissioners for the county without compensation, provided they were authorized to appoint one or more inspectors at a compensation not to exceed \$900 per year in the aggregate. The communication was accompanied by a petition of fruit growers favoring the appointments. The petition was merely placed on file.

San Benito.

PROFITABLE HAY.—Hollister Bee, June 4: Assessor McPhail has a fine stand of wheat hay on his Gabilan ranch this year, and from which he expects to cut about 400 tons. The crop stands about 3 feet high, perfectly clean with well-developed heads. Nearly all the crop has been contracted for at \$20 per ton delivered at the Lime Kills.

IRRIGATION PLANT.—Dan McCloskey finished the boring of two wells on his place, two miles north of town, this week, which promise to supply a good quantity of water for irrigation purposes. The pump was started Tuesday morning and run all day without a hitch or babble. Thursday it was started again and will be kept in constant use until an alfalfa field of seventeen acres is thoroughly irrigated. The water is raised with a 5-inch pump, with a flow at the present time sufficient to irrigate about two acres per day. A threshing engine of 25 H. P. is used, but Mr. McCloskey expects in a few weeks to have placed in position a stationary engine of 15 H. P. Experts who have examined the plant say that it is the best one so far developed in this valley.

San Bernardino.

TOBACCO PLANTING.—Times-Index, May 27: Frank Oswega, an experienced tobacco raiser, claims that as fine tobacco as can be raised in the United States can be raised here; the only trouble lies in the curing. The atmosphere is so dry that unless it is overcome the weed cures green, instead of assuming the rich brown usually attributed to it. However, he has been making tests in curing and feels that he can secure good results by methods all his own. An acre of tobacco will be cultivated on the ranch of Al Mettler in Cajon Pass. A man has already been sent up to break and prepare to ground. Already 5000 little plants about 2 or 3 inches high are awaiting transplanting. The seeds are from the best tobacco plants grown in Cuba, and the transplanting will probably be accomplished in a couple of weeks.

JERSEY BULL.—Sun, May 25: D. G. Whiting, the well known stock man living on Colton avenue, has just received,

direct from the celebrated stock farm of T. C. Cooper near Philadelphia, Pa., a thoroughbred Jersey bull, "Pedro Prince Primrose," No. 50,714. He is six months of age, fawn color, dark nose and ears. His sire was "Pedro Royal Marjoram," No. 28,560, while his dam was "Rioter Lorne Primrose," No. 88,583, and both sire and dam carried away blue ribbons at Chicago in 1893.

San Diego.

CREAMERY.—Ramona Sentinel, June 2: Santa Ysabel Creamery is one of the most interesting places in the back country. The new machinery is all in operation and working splendidly. The steam separator is proving all that was promised for it. It handles the milk to perfection, and the 175 cows are barely turned out of the corral after milking before their product is separated, the cream contained in large cans and the skim milk running down through the pipes to the hog pens. The separator will save about 50 per cent during the hot weather, over the old method of skimming. The steam churn turns out about 200 pounds of butter daily. But this is not the whole butter product of the creamery. At the mesa dairy 200 cows are milking. About 10,000 pounds of hogs have been shipped to San Diego within a month. Everything is promising for the future of ranch, and shows the results of excellent management.

San Joaquin.

SUMMER-FALLOW AND WINTER PLOWED.—Mail, June 3: This morning Mr. Milan brought to the Mail office a few stalks of wheat taken from the Kelley ranch near Peters. The stalks were taken from different parts of a tract of 240 acres. The wheat is a little over 2 feet high, but the heads are not very well developed, and Milan thought it would go about ten sacks to the acre. Adjoining this 240-acre tract was one of 134 acres, in which there was not a spear of wheat. Both tracts were sown the same day with the same kind of seed, and the land is alike. The only difference is that the land with the crop was summer-fallowed and the other winter plowed. The line of demarcation between the two tracts is as well defined as a plow can make it. Another peculiarity noticed by Milan was that where it is usual to see weeds and clover grow up with the wheat for 5 or 6 inches, this year there is not a sign of either. It is probable that the dry spell killed off the weeds.

LODI CREAMERY.—Sentinel, June 4: The Lodi Creamery Association has re-elected as directors Messrs. S. A. Kitchener, Geo. Hogan, H. Thompson, H. Beckman and E. Lawrence. Mr. Kitchener is president and G. E. Lawrence secretary. The creamery is now out of debt and on a paying basis.

WATERMELONS.—Watermelon men will have no chance to complain of overproduction this year. The crop will no doubt be the lightest this section has known in years—possibly ever since it became famous for the size and succulence of its melon fruit. The absence of late rains worked havoc with the melon men who did not have their ground in good condition, and some could not even get their ground plowed in time to do any good. Some gave up the idea of planting the favorite crop and put in other crops which promise better margin. Thus the acreage is small and the few who are successful with watermelons this season will have a small Klondike. Lodi will probably have to supply the whole melon market this time, for, if reports be true, rival melon centers have been knocked out of existence on account of the drouth. Take it all in all, there are many worse places than Lodi this dry season.

San Luis Obispo.

THE SUGAR FACTORY.—Breeze: The factory building at Guadalupe Lake is of brick and has been pushed rapidly and the masons are now working on the sixth and last story of the main building. Owing to the fact that no beet crops will be handled this year, the placing of machinery will not be rushed as was the first intention. It is now probable that the factory will not be ready to go into operation before September.

Santa Barbara.

BEANS AT SANTA MARIA.—Santa Barbara Press, June 2: W. A. Haslam says the recent rain has greatly benefited crops, there would be considerable hay raised, and since the storm a large acreage has been planted to beans, with a good outlook for a fair crop.

DROUTH-DRIVEN ANIMALS.—People living along the base of the mountains complain that the dry weather is bringing all sorts of creatures down to civilization. Skunks are a great nuisance, and the chicken coops are suffering from nightly visits by the little thieves. The howl of the coyote is heard before, and even a mountain lion was reported seen half way down the valley in Montecito. Large gray squirrels are also doing great damage to vegetation, all on account of the drouth, which has curtailed the supply of feed in the hills, and driven the animals to seek a livelihood in the valleys.

Santa Clara.

SHIPMENTS.—Mercury, June 1: The overland shipments from San Jose since January first aggregate 12,000,000 pounds more than the total shipments for the corresponding period in 1897, and that was the banner year in the history of the country. It is evident that this year will witness a remarkable increase in the exportation of Santa Clara county products, notwithstanding the fact that it is a dry season.

SOROSIS ORCHARD.—Saratoga Item, June 3: During a recent trip to Sorosis orchard the boilers were found in place, engine set and the borers hard at work, double shift, getting the large irrigation plant ready for flooding the ranch. Mr. Crandall informed the scribe that they expected 800 tons of prunes from this orchard alone, and he has just ordered built, especially for them, a large Hamilton 7-size grader for dried fruit, and a large Cunningham green fruit combined cleaner, grader, dipper and spreader. With these added conveniences complete, with the fine buildings and a floor space of one and one-eighth acres, he says they are prepared to handle 2000 tons of green fruit—peaches, apricots and prunes.

CHERRY CROP.—Tree and Vine, June 4: The cherry crop of Santa Clara valley is proving to be very abundant and of very good quality. The Royal Annes are now being picked and packed in the earlier districts and are looking very fine. Returns of black cherries shipped to New York and other Eastern cities are in some cases yielding 6 cents per pound net to the growers, which is all that can be reasonably expected. Some, however, are finding the market very dull and believe the production of cherries more than the market demands. Better distribution, however, will remedy this, for California cherries are very popular.

PRUNE CROP.—From present indications the prune crop is likely to be fully up to and perhaps exceeding that of last year, but the quality will vary greatly and prices probably have a wide range. Some buyers are wondering whether the conditions will warrant them in contracting for average crops at \$30 per ton.

Santa Cruz.

THE BERRY GROWERS.—Pajaronian, June 2: The Watsonville Berry Growers' Association was regularly organized last Saturday afternoon. It was decided to give the auction system a further trial, one which would test the merits of selling small fruit. Jos. Albright and E. Werner were selected to take charge of the shipping branch. The association starts off with the following members: J. Albright & Son, J. B. Holohan, C. N. Petersen, Driscoll Bros., R. Pinto, F. H. Schmidt, E. C. Bronson, F. D. Blackburn, Werner

Bros., Tuttle & Leland, James Hopkins, Jr., M. A. Hudson, L. & M. E. Martinelli, McNeely & Bloom, and G. H. Brewington. This has not been a favorable season for berry growers. The cool weather and frequent rains have done much injury to the quality of the strawberry crop. Jesse Hamm reports berry shipments for the week ending May 25th, 2217 chests; for the week ending June 1st, 1942 chests; total for the season, 10,080 chests.

SELLING A FRUIT CROP.—Last Thursday bids were opened by Judge Bockius for the fruit crop of his home and College Lake orchards. Ten bids were offered, ranging from \$1825 to \$2727.50. The latter bid was made by J. P. Miovich & Co. and was accepted. The plan and time adopted by Judge Bockius for selling his orchard strikes us as being the best way. All the packers have an equal chance, and the sale occurs when the fruit has set. The buyer knows that he is going to have apples—not blossoms—and his price is not used as a club to raise the bid of a rival.

Sonoma.

WHAT A DUCK CONTAINED.—Petaluma Courier: C. M. Knudsen of Valley Ford killed a tame duck several days ago and on dressing the fowl its gizzard was found to be a veritable junk shop. It contained about twenty-five good-sized wire nails, tacks of assorted kinds and sizes, iron screws, pieces of iron, matches and hardware which would put to shame the stomach of a circus ostrich.

PEACHES.—Republican, June 6: James Robertson and W. B. Cooley were in from the Forestville country Thursday. Mr. Robertson says he will have a most remarkable crop of peaches this season. He has already thinned the crop once and now he finds that the thinning process will have to be repeated to keep the trees from breaking down under their loads of fruit. One strange thing about Mr. Robertson's big crop is that many of his neighbors have no crop at all to speak of. Mr. Robertson's peaches are mostly Muirs.

Tulare.

LINDSAY CROPS.—Cor. Register, June 3: The crops around Lindsay are short, almost too short to mention. The best of the wheat is about 1 foot in height, but the heads are fair. Mr. D. Swansen headed 300 acres and got enough of heads to make a stack 40 feet square. He will not thresh it, but will put it in his barn to feed. Mr. J. Hoskins will head 100 acres this week and expects to fill his barn. There will be no grain threshed near Lindsay; most of the crops will be given up to stockmen.

ALFALFA GROWTH.—Hanford Sentinel, June 3: The growth of alfalfa in this county is simply astonishing. The plant is known to extend its roots deep into the soil—in some instances reaching even 15 feet to water. A root brought in by W. P. McCord of Dallas yesterday measured 8½ inches in circumference just below the crown, and the plant grew on land that has never been plowed.

LAKE LAND RECLAMATION.—Hanford Sentinel, June 3: Some twenty-five men owning claims on Tulare lake met in Hanford last Saturday and discussed leveeing to protect their land from the lake during the high-water season. Doctor Duncan said that the levee can be built for about \$300 per mile. There are about twelve miles to be built, which means \$3600; but, owing to the large acreage, it is estimated that a payment of 15 cents per acre by each holder will be sufficient, and, after this amount is raised, insuring the building of the levee, it is the purpose to then proceed to form the reclamation district according to law. A committee of five was appointed by Chairman Dixon L. Phillips to consult every land owner within the proposed district and ascertain whether they will be willing to advance 15 cents per acre on land claimed by them for the purpose of creating a fund for levee building. Mr. Phillips appointed J. D. Hefton, Jno. F. Pryor, J. G. Covert, J. O. Robinson and N. W. Motheral as the committee.

Yolo.

CROPS.—Woodland Mail, June 7: The effect of the cool, cloudy, damp weather of the last month has been to improve many of the then hopeless fields of grain in this county. Now the gratifying word comes from all parts of the compass that there will be much work for the harvester. The then seeming desolation is improved a hundredfold and more the prospect for grain and hay, until what then promised starvation for beast and foreign bread for men, is now changed to hopeful home living. What was then called no crop is now a light crop only. In spots, it is true, the harvester will be nil, but the area of nothingness has grown pleasingly small within a month.

Yuba.

HAY FIGURES.—Wheatland Four Corners, June 4: That there is money in hay and grain this year we have proof positive in the following figures given us by Jim Shaver this week, showing a profit of \$47.60 per acre on hay land: From a 2½-acre piece of wheat hay just harvested Mr. Shaver sold eleven tons at \$12 per ton. The hay was delivered about town last week and cash received on delivery. The cost of plowing, seeding, mowing, raking, cocking, hauling and weighing this crop was \$12.50, which, deducted from \$132, the gross receipts, leaves \$119.50 net profit—a net profit of \$47.60 per acre. Mr. Shaver has nearly 100 acres of creek land in grain, a part of which he will cut for hay. He estimates that the land will yield about eight sacks of wheat.

Irrigating Deciduous Fruits.

At the recent meeting of the Santa Clara Fruit Exchange, as reported by the *Tree and Vine*, the question of special irrigation for this dry year was spoken of. Judge Myrick of Campbell said that by means of short wooden tubes he was able to introduce the water below the surface, out of the way of immediate evaporation and in direct contact with the roots. By means of a water cart he supplied from fifty to eighty gallons per tree, and was thus able, with a limited supply of water, to get over quite an area and do a maximum of good for the amount of water supplied. Henry Shaw of Warm Springs said that his soil did not seem to need a great deal of water, and that by the application of 100 gallons of water per tree the growth would be sustained and the fruit perfected.

The comparative merits of irrigating by checking out in squares and flooding, in the one case, or of running the water through furrows, in the other, was spoken of. Prof. C. W. Childs preferred the furrow system. Mr. Robinson said he had an irrigating plant capable of furnishing 30,000 gallons per hour, and by means of it was able to thoroughly irrigate 130 trees in eleven hours, supplying each tree with from 2500 to 5000 gallons, which did not seem at all too much. His soil was a gravelly loam. Several others related their plan of operations, but perhaps these mentioned may be types of the various methods.

THE HOME CIRCLE.

Cuba Libre.

Comes a cry from Cuban water—
From the warm, dusk Antilles—
From the lost Atlanta's daughter,
Drowned in blood as drowned in seas
Comes a cry of purpled anguish;
See her struggles, hear her cries!
Shall she live or shall she languish?
Shall she sink or shall she rise?

She shall rise, by all that's holy!
She shall live and she shall last—
Rise as we, when crushed and lowly,
From the blackness of the past.
Bid her strike! Lo, it is written:
"Blood for blood and life for life;
Bid her smite, as she is smitten;
Stars and stripes were born of strife."

Once we flashed her lights of freedom,
Lights that dazzled her dark eyes,
Till she could but yearning heed them,
Reach her hands and try to rise.
Then they stabbed her, choked her, drowned her,
Till we scarce could hear a note.
Ah! those clanking chains that bound her,
Oh! those robbers at her throat!

And the kings who forged these fetters!
Ask five hundred years for news.
Stake and thumb-screw for their betters,
Inquisitions! Banished Jews!
Chains and slavery! What reminder
Of one red man in that land?
Why, these very chains that bind her
Bound Columbus foot and hand.

She shall rise as rose Columbus,
From his chains, from shame and wrong—
Rise as Morning, matchless, wondrous—
Rise as some rich, morning song!
Rise a ringing song and story—
Valor, Love personified!
Stars and stripes espouse her glory,
Love and liberty allied.

—Joaquin Miller in Frank Leslie's Monthly.

An Old Maid's Love Affair.

A child crying down in the swamp—
what could it mean? Miss Abigail
Drew stopped, and set down the heavy
basket of lunch she was carrying to
the men in the hayfield. It surely was
a child's cry, and a baby's too! How
it stirred the chords in her lonely,
longing heart! Miss Abigail loved
children with a passionate, yearning
love; and yet it has been years since
she had even heard a baby cry. Living
alone with her brother and his occa-
sional help, on that remote farm, all
social relationships, all neighborly
amenities and delights were almost
entirely denied her. And above all
things she missed and longed for the
sunny presence of children. She felt
that, if she only had a child to care for,
her barren, empty life would overflow
with joy and purpose. The day, now
so sad and meaningless, would be so
rich and blessed then! Ah! there is
nothing like the infinite aching of the
mother-heart in a childless breast.

Therefore, that child-cry, floating up
from the swamp, was heavenly music
to the heart of Miss Abigail Drew.
She clasped her hands and listened,
her whole being absorbed in the associ-
ations connected with the sound. Sudden-
ly her heart surged into her throat,
and she caught her breath with the
thought that rushed across her mind—
what if a baby had been left in the
swamp deserted—! And what if she
should be the one to find it and take it
home; and oh! what if nobody should
ever come to claim it! The wistful
face of the woman paled and flushed,
and flushed and paled in swift suc-
cession, as her heart brooded upon this
wonderful possibility. At length, with
a little cry that was all a prayer, she
sprang toward the swamp, leaving the
basket of lunch under the blaze of the
July sun.

When she emerged from the thick,
low woods at the bottom of the pas-
ture, her dress was torn and her face
scratched and streaming with perspi-
ration, but the rapture and triumph
that shone in her eyes, as she looked
down upon a bundle strained to her
breast, showed that life, for her, had
suddenly been lifted above all ordinary
conditions and considerations, and that
she was only conscious of walking upon
such roseate air as the old painters
limned beneath the feet of their exalted
Madonnas. A little face peeped out
from the ragged shawl that wrapped
Miss Abigail's precious burden, but the

plaintive cry had ceased, and the blue
eyes of the little foundling were gazing
up into those "two springs of limpid
love" that shone above them.

Nathan Drew and his two hired men
were waiting impatiently under the
shadow of a big elm tree, when their
breathless provider finally arrived with
the basket of lunch and that strange
bundle upon her left arm. It was long
past noon, and Nathan Drew was fret-
ting and fuming at his sister's unac-
countable delay.

"What in 'tarnal kept you so long?"
he demanded, as the panting woman
dropped the basket under the shadow
of the elm. "And for goodness' sake,
what ye got in yer arms?"

"A baby, Nathan!" replied his sis-
ter, in a voice full of soft, reverential
joy. "A poor little baby that was left
in the swamp. I heard it crying and
went to find it, and that's what made
me so late."

"Humph!" said Nathan Drew, tak-
ing the covering from the basket and
inspecting its contents. "What be ye
goin' to do with it?"

A cloud swept across the radiant
face of the woman. There was some-
thing distinctly forbidding in her broth-
er's tone and manner. Evidently, the
only question that had entered his
mind was how to get rid of the unwell-
come encumbrance that had been left
upon his land. Their thoughts were
travelling in diametrically opposite di-
rections—the woman's toward retain-
ing the child, the man's toward dispos-
ing of it!

There was something of the protect-
ive cunning of love in Abigail's evasive
answer to her brother. "Probably
somebody will come along and claim it
in a little while," she said.

Nathan Drew laughed derisively.
Then he took a huge bite out of one of
Abigail's delicious chicken sandwiches,
and washed it down with a gulp of cof-
fee from the warm can. "Very likely,"
he replied at length; "very likely!"
Then he laughed again. "Somebody
dropped it accidentally in the swamp,
eh, boys? Somebody'll be comin' back,
'most crazy to find it, by'n' by."

The hired men laughed servilely,
though it was plain that their minds
were chiefly absorbed by the lunch bas-
ket which their employer held between
his legs, and was steadily plundering.

"Well, come on, boys. Hitch up
here and have something to eat!"
cried the farmer. "We can't bother
about a baby all day. There's work to
be done."

The tongues of the hired men were
loosed as their anxiety disappeared,
and one of them, a swart little French
Canadian, exclaimed:

"Ah guess ah know where dat bebbly
come from, me! Dat man's leev in
lumber shanty on Coon Hill; he gone,
an' heez ol' hooman have t'ree, four,
five bebbly—prob'ly two. Ah bet dat
man's left dat bebbly, seh!"

"I shouldn't wonder," replied
Nathan Drew. "Shiftless cuss! Camp-
ing down on my property without even
asking my permission, and using my
lumber shanty, stove and wood! I'm
glad he's gone, but I wish he'd taken
his hull dern brood with him. The
young un'll prob'ly grow up jest like
the rest of 'em, lazy and wuthless."

"Ah heard say," continued the little
Frenchman, "dat man's Hinglishman,
good fambly, but not very strong for
work. Los' heez health, an' bliged to
take to the woods. No money—no
health—big fambly. Ah guess ah'll do
'bout the same thing as him, bah gosh,
if ah get too much bebbly!"

"Don't doubt it, Alphonse," re-
joined the farmer. "That's jest the
sort of a critter you and yer hull
Canuck tribe."

Alphonse grinned appreciatively,
and took no offense. Then silence fell
upon the three men until the last
crumb and drop of their noonday lunch
had disappeared.

Abigail tenderly laid the baby down
in the grass, while she gathered to-
gether the dishes and napkins and re-
packed them in the basket. Her
brother stood over her, watching. He
was a spare, hard-faced, iron-gray
man, who showed by every line and
feature the absence of sentiment in his

makeup. The woman's hands trembled
as she worked. She knew he was about
to say something concerning the child.
Presently he spoke:

"You kin keep that young un jest
two days, Abigail. Then, if there don't
nobody come to claim it, I am goin' to
take it to the Foundling Hospital."

Having thus delivered himself, he
shouldered his pitchfork and walked
determinedly away.

Tears obscured the homeward path of
the little woman as she struggled
through the shimmering sunlight with
the infant on her arm. She knew that
her brother would be turned from his
purpose neither by argument nor by
entreaty. He had spoken, and that
was an end of it,—the inflexible ulti-
matum of that old Puritan-bred tyranny
that survives in so many heads of New
England households.

But though the path was blurred, it
took her home—the only home she had
ever known, the roof under which she
had been born and reared, and which
had descended to her elder brother
when their parents died. Hastening to
the pantry, she took milk and warmed
it for the babe, half stupefied by starva-
tion. Then, clumsily, yet with a wo-
man's instinct, she sparingly fed the
child with a spoon, a few drops at a
time. As life came back to the little
body with nourishment, the baby cried
weakly, and Abigail strained it to her
bosom, while tears of mingled joy and
pity rained down upon the little head.
What a pretty child it was, despite its
suffering! What a clear, white skin;
what a little, pointed, dimpled chin;
what blue, blue eyes; what breadth of
forehead and fullness of temple; what
dainty little hands; what a soft, sweet
neck for nestling a mother's lips!

For two days Abigail Drew lived in
the awful joy of one who drains the
nectar from a cup which, when emptied,
must be dashed to earth. She tried to
put away the thought that she and
that little baby girl must part. She
tried to make those two precious days
heaven enough for all of life. She tried,
with all the dutifulness and reverence
of her nature, to bow to her brother's
will and be content. But every hour
the whisper in her heart grew stronger
and more insistent: "Cleave to the
child! Keep her, cherish her. She is
yours, a gift of God, the answer to your
life-long prayer."

At last she went to her brother, and
poured out her heart with an intensity
of passion he had never suspected in
that quiet, reserved, meekly subservi-
ent sister of his. But, although sur-
prised and disturbed, Nathan Drew
was not moved. His heart remained
obdurate. To him the thought of a
foundling child in the house was unen-
durable. Never a lover of children, al-
ways convinced in his own heart that
childlessness was the more blessed
state, how could he be expected to look
with favor upon an adopted baby—a
child concerning whose antecedents
and propensities one knew absolutely
nothing? No! he would not bear to it.
To the founding hospital at Mayfield
the little waif must go.

Toward evening of the last day of her
probation Abigail Drew began to
gather together certain little treasures
of her own—heirlooms. Her mother's
Bible, the laces left her by Aunt Judith,
an old-fashioned watch and chain, six
silver spoons worn thin as paper—
these, and a few other things, she
wrapped in a bundle; and then, taking
baby and bundle in her arms, she went
out, closing the kitchen door reverently
and softly behind her. Down the road,
through the haze of the late afternoon
she walked, as one in a dream, leaving
behind her all that she had ever known
and loved hitherto.

From the distant meadow came the
sound of whetstone on scythe blade—
what a clear, cheery ring! How could
Nathan beat such music, with banish-
ment for the babe—for both of them,
did he but know it—in his heart?

Beyond the bridge, Abigail turned
into the woods and followed the stream
westward; for the road ran too near
the meadow where Nathan and his men
were haying. The child fell to crying,
but she nestled it and kept on. Just be-
fore sunset she came out of the woods

upon another road, and followed it
southward. The summer dusk began
to deepen, yet she met no traveler and
passed no house. What a lonely coun-
try it was, that New Hampshire moun-
tain valley! The great hills looked
down over the woods like stern-faced
giants. The night air smelled of swamps
and piny glens and deep-buried soli-
tudes. The voices were all those of
wild creatures, mysterious and hidden.
How the weary, heartsick woman
longed for the sight of a roof, a chim-
ney, an open door—especially for the
face of one of her own sex. Only the
heart of a woman understands a wo-
man's heart!

At last, when the fireflies began to
drift across her path like sparks from
the crumbling embers of the sunset,
Abigail, turning a bend in the road,
came suddenly upon the welcome glow
of a farmhouse window. She hastened
forward, and, turning into the little
path between the lilac bushes, ap-
proached the open door. A man sat
upon the doorstep, smoking; and as he
saw the approaching figure he arose
and called to his wife.

A buxom, sweet-faced woman came
bustling to the door, skewer in hand.
The moment Abigail's eyes rested upon
her face, she cried:

"Lucinda Jones!"

The skewer fell clattering upon the
floor, and the two women rushed to-
gether, like amicable battering rams,
the arms of the larger embracing friend
and babe in their expansive embrace.

"Abigail Drew! Be you still living
in these parts? I heard away out in
York State, where we just moved from,
that you and your brother had gone
West twenty years ago. My! and
you've been married and got a baby!
Come in—come in! Lorenzo, fetch the
rocker out of the settin' room. How
glad I am to see you again, Abigail.
I thought you and me was parted for-
ever."

How straight love had led her wan-
dering feet! Abigail sat down in the
cushioned rocker and marveled at the
cheerful firelight playing on the face of
the sleeping babe. Welcome—refuge—
sympathy! Ah! she had not obeyed
the inward voice in vain.

* * * * *

Six weeks was Nathan Drew a-search-
ing for the treasure he had lost. He
drove east, west, north and south,
stopped at every mountain farmhouse
to seek news of his sister. Nobody had
seen her going or coming. The yawning
earth could not have swallowed her
more completely.

But at last he found her. She was
sitting, with her baby, on a low chair,
under the lilac bushes, and he spied her
before he had reached the house. She
saw him at the same moment, and,
springing up like a haunted creature,
made as if she would have fled. But he
stopped her with a pleading gesture,
and a look on his face such as she had
not seen since they were children to-
gether.

"You don't know how I've missed
you, Abigail," he said, simply, drawing
rein in front of the lilac bushes. The
man looked haggard and worn, and
there was a pathetic tone in his voice.

"I can't go home with you, Nathan,"
said Abigail, firmly, as she pressed the
rosy child closer to her bosom. Yet
there was a yearning look in her eyes,
that her brother was not slow to in-
terpret.

"I've thought it all over since you
left, Abigail," he said; "and it's be'n
borne in upon me that per'aps I was
wrong about the child. Come home and
you shall keep it as long as you live. I
won't say another word. It's the only
love affair you ever had, Abigail, and I
ain't a-going to stand any longer be-
tween you and your heart."

The tears welled to Abigail's eyes as
she came out into the road with her
child. "Put your hand on her head,
Nathan," she said, "and swear to me
that you will never part us. Then I
will go home with you."

Nathan Drew hesitated a moment.
Then he touched the child's head with
the tips of his horny fingers and said:
"I swear it, Abigail."

So they two and the child went home
together.

Why Minnie Could Not Sleep.

She sat up in bed. The curtain was drawn up, and she saw the moon, and it looked as if it were laughing at her. "You needn't look at me, moon," she said. "You don't know about it, you can't see in the daytime. Besides, I am going to sleep."

She laid down, and tried to go to sleep. Her clock on the mantel went "tick-tock, tick-tock." She generally liked to hear it. But to-night it sounded just as if it said, "I know, I know, I know."

"You don't know, either," said Minnie, opening her eyes wide. "You weren't there, you old thing! you were upstairs."

Her loud noise awoke the parrot. He took his head from under his wing and cried out, "Polly did."

"That is a wicked story, you naughty bird!" said Minnie. "You were in grandma's room, so now!"

Then Minnie tried to go to sleep again. She lay down and counted white sheep, just as grandma said she did, when she couldn't sleep. But there was a big lump in her throat. "Oh, I wish I hadn't."

Pretty soon there came a very soft patter of four little feet, and her pussy jumped up on the bed, kissed Minnie's cheek, and then began to "purr r-r-r, purr r-r-r." It was very queer, but that, too, sounded as if pussy said, "I know, I know."

"Yes, you do know, kitty," said Minnie, and then she threw her arms around kitty's neck and cried bitterly. "And—I guess—I want—to—see—my mamma!"

Mamma opened her arms when she saw the little weeping girl coming, and then Minnie told her miserable story.

"I was awfully naughty, mamma, but I did want the custard pie so bad, and so I ate it up, 'most a whole pie, and then—I—oh, I don't want to tell, but I s'pect I must, I shut kitty in the pantry to make you think she did it. But I'm truly sorry, mamma."

Then mamma told Minnie that she had known all about it. But she had hoped that the little daughter would be brave enough to tell her all about it herself.

"But, mamma," she asked, "how did you know it wasn't kitty?"

"Because kitty would never have left a spoon in the pie," replied mamma, smiling.

The Country Boy.

A country-bred boy has the distinct advantage over a city-bred fellow in two things: his strength is greater by reason of his country birth, and he has a clearer idea of hard work. The country-bred boy, as a general rule, has to struggle for his existence; he has to help on the farm, and generally it is at hard work. This gives him strength and power of endurance, while all the time he is breathing an atmosphere of pure air into his lungs. Experience prepares such a boy for hard work. The city-bred boy rarely knows what hard work is, and when he meets it as a young man he cannot endure it. It is true that the country boy approaches city problems with a lesser knowledge of them than does the city-bred boy. But often, as has been said, the two fundamental essentials in carving out one's way to a successful career are good health and hard work. With these a young man can accomplish almost anything he desires; without them he can do nothing.—*Ladies' Home Journal.*

WHAT a pretty custom that is that they have in Denmark of swapping children! It appears that during the summer holidays the Danes send the school children of the city to the country and those of the country to the city. The parents exchange temporarily, so that the children are strengthened and made happy in the country, while the people in the cities show the little country people the sights and get up festivals for them. Ten thousand children were so swapped in Copenhagen last year.

Chaff.

The chafing dish supper: "Waal, girls," said Uncle Si Low, who was visiting his nieces, "when you come down to the farm in the summer you make lots uv fun uv us because we eat in the kitchen. But I don't see ez it makes much difference whether you eat in the kitchen or cook in the dining room."

Tired: "The children wish me to ask you to tell them some fairy stories," said the politician's wife.

"My dear," was the reply, "I can't do it. I have been talking to a great many voters to-day. I must have some relaxation from the routine of business."

Observing Brother: Mr. Smith is waiting down stairs for you. Sister Gladys: Oh, is that so? I wasn't expecting a caller this evening. Observing Brother: Did you think he was dead?

She: You say I am the first girl you ever made love to, but your manner indicates that you have had experience. He: Please explain how you know. After he had gone she was almost tempted to jab herself with her hatpin.

They say that Mrs. Grindly does a great deal of fancy work. I should say she did. When she can find nothing else to do she ruffles her husband's temper.

Mistress: Why, Bridget, you surely don't consider these windows washed? Bridget: Sure I washed 'em nicely on the inside, mum, so ye can look out; but I intentionally left them a little dhirty on the outside so thim aignorant Jones children nixt door couldn't look in.

Her pronunciation wasn't just what it should have been, perhaps, but she nevertheless started in to read a little history to Hezekiah:

"Listen to this, Hez," she began; and as he propped his handiest ear to await the denouement she readjusted her glasses and read:

"The Spanish Armada—" "What's that?" interrupted Hezekiah; "the Spanish are madder, are they? Well, ef they won't be madder yit before we git through with 'em, then the American eagle's nothin' but a stuffed shide poke b' gosh!"

The Flaid and Handkerchief.

A touching and poetical custom prevails in the Welsh-Tyrol, says the *London News*. When a young maiden is about to be married, immediately before she steps across the threshold of her old home, on her way to the church, her mother solemnly gives her a new pocket-handkerchief. The bride holds it in her hand throughout the marriage ceremony, using it to wipe away her tears. So soon as the marriage festivities are ended the young wife lays the handkerchief aside in her linen closet, and there it remains as long as she lives.

Nothing would induce a Tyrolese wife to use this sacred handkerchief. It may be half a century, or longer, before it is taken from its place to fulfill the second and last part of its mission. When the wife dies, perhaps as a gray old grandmother, the loving hands of the next to kin place the bridal handkerchief over the face of the dead and it is buried with her in the grave.

Fainting Fits.

A fainting fit is not often in the least dangerous. Unless a patient is treated in an improper manner it will pass away in a short time without leaving any evil effects. It is caused by the temporary absence of blood from the brain. Do not on any account lift the head of the patient on a pillow, or serious consequences may follow. On the contrary, allow the body to be lifted a little higher than the head and remain resting in a gradually inclined position from the feet to the head. Loosen the clothes, especially about the throat and waist. Admit fresh air in abundance and do not allow many persons in the room. Apply smelling

salts to the nostrils, or if smelling salts are not at hand use a little ordinary ammonia diluted with water and poured on a handkerchief. A few drops of sal volatile in a glass of cold water will assist in restoring full consciousness when the patient can swallow.

It Affected the Supply.

"How do you sell eggs?" asked a Champa street woman of her groceryman.

"Eighteen cents a dozen—war prices, you know."

"But what difference does that make with the hens?"

"Why, don't you see, all the black Spanish hens have been killed off, and they were the greatest layers of any breed we had."—*Denver Times.*

THE editor of an exchange has discovered that there is a wide difference between the schoolbooks of the present and those of long ago. He says that when he first went to school he read his lessons in the First Reader something like this: "See the cow. Is not the cow nice? Can the cow run? Yes, the cow can run. Can the cow run as fast as the horse?" The latest, up-to-date style of reading it by the average kid is as follows: "Git on to the cow. Hain't she a beau? Sure, she's a coker. Can she get a move on herself? Can she hump it like de hoss? Nit, she ain't in it with de hoss."

DOMESTIC ECONOMY.**Care in Preparing Coffee.**

The Frenchwoman measures the water she is to use in making coffee, not as she puts it on the coffee, but when she puts it into the tea kettle to heat. That simplifies matters. She pours on her water a little at a time, always boiling, and she does not put in too much.

"There are not many people here who measure the water for their coffee in that way," some one said to Mme. Blay.

"No," she answered, quickly, "and that is the reason why they do not have good coffee."

The Frenchwoman gives the recipe for her after-dinner coffee before she gives that for her breakfast coffee.

She allows one and a half tablespoonfuls of coffee for each small cup of after-dinner coffee, and into her tea-kettle, if she is to have coffee for six people, she measures six small cups of water.

Her coffee pot is standing in a dish of hot water on the table. It is not safe to trust even a careful French servant with one of those beautiful copper coffee pots on the stove, though it might be done without injury to either coffee or coffee pot. There is, however, no

possible chance of boiling if there is no fire under the pot.

When the water is poured on a little at a time, being distributed by the two upper filters, it reaches the coffee slowly, does not sift directly through, but lies upon it, softens and swells it, and takes out the strength. By the time the last drop of boiling water from the kettle has been poured in, the coffee has swelled until it nearly fills the upper part of the coffee pot, and the liquid below is black and clear and strong. The cook has taken great pains not to disturb the grounds in any way, to spoil that beautiful clearness.

But the small amount of water used to the large amount of coffee has by no means extracted all its strength, and the thrifty and sensible Frenchwoman does not think of throwing it away. The following morning she takes the coffee that has been used for the dinner beverage, adds to it two tablespoonfuls of chicory, or, if she wishes it to be extra good, two more tablespoonfuls of coffee, pours on her six large cups of water, measured and heated as she prepared for her black coffee of the night before, has her milk heated to put in it, and has a good cup of coffee.

Kitchen Lore.

SUGAR COOKIES.—One cupful of butter, one cupful of cream, two cupfuls of sugar, three eggs and one teaspoonful of soda. Beat the eggs for one minute, add the sugar and beat again, then put in the butter (soft and melted) the cream and the soda dissolved in a very little water, and flour enough to make a very soft dough; roll out, cut with a cake cutter and bake in a brisk oven.

BAKED HASH.—Mix together equal quantities of finely chopped cold boiled potatoes and cooked beef. To one pint of each allow one and one-half cupfuls of stock, one tablespoonful of butter, and salt and pepper to taste. Melt the butter in a frying pan, add the other ingredients, and stir over the fire until heated through. Turn into a shallow greased baking pan, and bake for half an hour in a quick oven.

COCOANUT DROP CAKES.—Cream well together one-half of a cupful of butter and one cupful of sugar; add the beaten yolks of two eggs, then alternately one-third of a cupful of milk and two cupfuls of sifted flour. Beat well until smooth, add one scant teaspoonful of vanilla, one-quarter of a teaspoonful of salt, one heaping cupful of grated cocoanut, the stiffly whipped whites of the eggs and one heaping teaspoonful of baking powder. Beat for a moment and drop by the spoonful on well-greased pans. Flours vary so much that it may be necessary to add one or two spoonfuls more than the recipe calls for to keep them in shape. When baked and cold, put away in a stone jar.

Your Liver

needs coaxing, not crowding. Dr. Ayer's Pills stand without a rival as a reliable medicine for liver complaint. They cure constipation, and they cure its consequences, piles, biliousness, indigestion, sick headache, nausea, coated tongue, foul breath, bad taste, palpitation, nervousness, irritability, and many other maladies that have their root in constipation. They are a specific for all diseases of the stomach and bowels, and keep the body in a condition of sound health.

"I have used Ayer's Pills for the past thirty years and consider them an invaluable family medicine. I know of no better remedy for liver troubles, and have always found them a prompt cure for dyspepsia."—JAMES QUINN, 90 Middle Street, Hartford, Conn.

Take Ayer's Pills

S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, June 8, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | July. | Dec. |
|----------------|-----------------|-----------------|
| Wednesday..... | 98 1/4 @ 91 1/4 | 79 1/4 @ 77 1/4 |
| Thursday..... | 88 1/4 @ 91 1/4 | 76 1/4 @ 77 1/4 |
| Friday..... | 92 @ 94 | 78 @ 79 |
| Saturday..... | 94 1/4 @ 92 1/4 | 78 1/4 @ 77 1/4 |
| Monday..... | 90 1/4 @ 88 1/4 | 76 @ 74 1/4 |
| Tuesday..... | 87 1/4 @ 86 | 75 @ 74 1/4 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | July. | Dec. |
|----------------|-------------|-------------|
| Wednesday..... | 9s 10 1/4 d | 6s 10 1/4 d |
| Thursday..... | 9s 11 1/4 d | 6s 7 1/4 d |
| Friday..... | 9s 3 1/4 d | 6s 9 d |
| Saturday..... | 9s 6 d | 6s 9 1/4 d |
| Monday..... | 9s 1 d | 6s 6 1/4 d |
| Tuesday..... | 8s 6 d | 6s 4 1/4 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | Dec. | May. |
|----------------|---------------------|-----------------|
| Thursday..... | \$1 39 1/4 @ 42 1/4 | @ |
| Friday..... | 1 44 1/4 @ 43 1/4 | \$1 48 @ 46 1/4 |
| Saturday..... | 1 42 @ 40 1/4 | 1 45 @ |
| Monday..... | 1 39 @ 36 1/4 | @ |
| Tuesday..... | 1 35 1/4 @ 36 1/4 | @ |
| Wednesday..... | 1 36 1/4 @ 37 1/4 | @ |

Wheat.

The wheat market has been almost steadily declining on Call Board since last review, Eastern and foreign markets in the meantime showing heavy breaks. In Eastern markets there was a decline of nearly 10c per bushel in July wheat and about 7c in September delivery. On the local Call Board December wheat dropped about 6c per cental, with a recovery at this writing (Wednesday) of about a cent. While spot values are lower than a week ago, there has been little or nothing to test them and determine just what the depreciation has been. Both shippers and millers have been virtually out of the market. Exporters have no ships loading and millers claim they are overstocked with flour. Trade will not long remain stagnant, however, as both shippers and millers will be in the market as soon as new wheat begins to be offered freely. The harvest is now on in the southern portion of the United States and in southern Europe. The world's visible supply is on the increase, and importing countries are keeping hands off to see how low values will go. That wheat will drop to unprofitable figures for most growers is doubtful.

With the new season near at hand, with reserves in importing countries and stocks in the control of shippers nearly exhausted, and with crop prospects good in the greater portion of North America, outside of California, and conditions above the average in the principal wheat growing countries of Europe, it is natural that the influences affecting the market should be in the main bearish in their character. While the crop in this State will undoubtedly be light, it will prove considerably larger than was thought possible six weeks ago, the weather in the meantime having been in the main exceptionally favorable for growing grain which was still in condition to be benefited. There were doubts two months ago about the State having any surplus wheat this season. It is now generally conceded that there will be more than enough for home consumption, although the amount available for export will undoubtedly make a slim showing as compared with the average of recent years. The amount of wheat on hand in the State, as shown by the last exhibit of the Produce Exchange, is greater than was generally estimated. Stocks of wheat remaining in the State on June 1st are given at 158,000 tons, as against 86,600 tons a year ago, 132,700 tons on June 1st, 1896, and 315,000 tons on June 1st, 1895. Of this season's carry over stock, perhaps more than the ordinary proportion is still in the hands of producers. There has been thus far this month only one wheat clearance from this port, and not likely to be many additions during the next thirty days. New wheat arrived here in small quantity on Monday from Bakersfield, Kern county, being the first of the season, and brought \$1.37 1/2.

| | |
|-------------------------------------|---------------|
| California Milling..... | \$1 50 @ 1 65 |
| Cal. No. 1 shipping, alongside..... | 1 40 @ 1 45 |
| Oregon Valley..... | 1 40 @ 1 45 |
| Walla Walla Blue Stem..... | 1 50 @ 1 60 |
| Walla Walla Club..... | 1 40 @ 1 45 |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 white wheat per cental for the week were as follows for the options named:

December, 1898, delivery, \$1.42 @ 1.35 1/4.
May, 1899, delivery, \$1.45 @.

Wednesday, at regular noon session of Call Board, December wheat sold at \$1.36 1/4 @ 1.37 1/2; May 1899, \$ @.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|-------------------|-----------------|
| Liv. quotations..... | 68 1/4 @ 65 1/4 | 88 1/4 @ 85 1/4 |
| Freight rates..... | 18 @ 20s | 27 1/4 @ 30s |
| Local market..... | \$1.23 1/4 @ 1.30 | \$1.40 @ 1.45 |

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on May 1st and June 1st:

| Tons— | May 1st. | June 1st. |
|-------------|----------|-----------|
| Wheat..... | 45,557 | *42,542 |
| Barley..... | 15,134 | *15,874 |
| Oats..... | 3,400 | 3,092 |
| Corn..... | 852 | 1,592 |

*Including 20,310 tons at Port Costa, and 19,179 tons at Stockton.

†Including 5,700 tons at Port Costa, 2,612 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st

inst. show a decrease of 3,035 tons for month of May. A year ago there were 26,269 tons wheat in Call Board warehouses.

STOCKS OF GRAIN IN STATE JUNE 1.

Stocks of cereals, etc., in the State on June 1st, 1898, and previous dates, are given by the Produce Exchange as follows:

| | June 1st. | 1898. | 1897. | 1896. | 1895. |
|------------------|-----------|-----------|-----------|-----------|-------|
| Flour, bbls..... | 87,380 | 94,960 | 101,991 | 51,067 | |
| Wheat, cts..... | 3,152,680 | 1,733,880 | 2,655,340 | 6,306,340 | |
| Barley, cts..... | 943,060 | 758,600 | 1,013,540 | 714,440 | |
| Oats, cts..... | 109,380 | 81,960 | 78,500 | 108,960 | |
| Rye, cts..... | 54,300 | 21,360 | 17,100 | 1,480 | |
| Corn, cts..... | 112,780 | 61,280 | 103,460 | 65,340 | |
| Beans, sks..... | 561,263 | 505,730 | 369,306 | 65,819 | |

Flour.

Immediately following our last review, there was a further reduction in official card rates of 25c per barrel, but as was announced in previous issue, this last reduction in official prices had been more than anticipated by cuts made to buyers from the quotations which had been ruling. Stocks of flour in the State on June 1st are reported at 87,380 barrels, being 7580 barrels less than a year ago, 14,610 barrels less than two years ago, and 36,373 barrels more than at corresponding date in 1895.

| | |
|---------------------------------|---------------|
| Superfine, lower grades..... | \$3 75 @ 4 00 |
| Superfine, good to choice..... | 4 00 @ 4 25 |
| Country grades, extras..... | 5 00 @ 5 25 |
| Choice and extra choice..... | 5 25 @ 5 35 |
| Fancy brands, jobbing..... | 5 40 @ 5 60 |
| Oregon, Bakers' extra..... | 5 00 @ 5 25 |
| Walla Walla, Bakers' extra..... | 5 00 @ 5 25 |

Barley.

Market for this cereal has not developed any noteworthy firmness since last issue, still values have shown more steadiness than during preceding week. Trading in the sample market continued to be confined mainly to Feed descriptions. There was little direct inquiry for Brewing grades from any quarter, and values for the latter were necessarily poorly defined. The Produce Exchange reports 47,000 tons barley in State on 1st, being a considerably greater quantity than was generally estimated, and larger than reported on June 1st of either 1897 or 1895. On 1st of June, 1896, the quantity of barley in the State was stated to be 52,000 tons, or 5000 tons in excess of present stocks. New crop barley is about due, and will probably be on market in quotable quantities in a week or ten days. December delivery of No. 1 Feed sold down to \$1.16 on Monday, the lowest figure touched this week for barley of the new crop.

| | |
|---------------------------------|-----------------|
| Feed, No. 1 to choice..... | 1 20 @ 1 22 1/2 |
| Feed, fair to good..... | 1 17 1/4 @ 1 20 |
| Brewing, No. 1 to choice..... | 1 30 @ 1 35 |
| Chevalier, No. 1 to choice..... | @ |
| Chevalier, No. 2..... | @ |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

December, 1898, delivery, \$1.14 @ 1.19 1/4.

May, 1899, delivery, \$ @.

Wednesday at regular noon session of the Call Board Dec., 1898, feed sold at \$1.17 1/4 @ 1.17; May, 1899, \$ @.

Oats.

Trading during the week under review has not been brisk in oats of any description. There were no pronounced declines in quotable values, but market tended against buyers, largely due to weakness existing in other cereals. The Produce Exchange, however, reports larger stocks of oats on hand than at corresponding date of any previous year since 1899. The quantity now in the State is given at 5469 tons. Stocks in June, 1894, and in June of 1895 were, as reported, nearly of the same volume as at present.

| | |
|-------------------------------|---------------------|
| White Oats, fancy feed..... | 1 37 1/4 @ |
| White, good to choice..... | 1 30 @ 1 35 |
| White, poor to fair..... | 1 27 1/4 @ |
| Gray, common to choice..... | 1 27 1/4 @ 1 32 1/2 |
| Milling..... | 1 32 1/4 @ 1 37 1/4 |
| Surprise, good to choice..... | 1 35 @ 1 40 |
| Black Russian..... | @ |
| Red..... | @ |

Corn.

Market is rather easy in tone, with fairly liberal offerings, and demand not very active. Even at concessions from rates lately prevailing, buyers could not be induced to take hold freely. Eastern corn is still coming forward, but those in a position to know state that little or none is now being started this way from primary points. Supplies in State are said to be 5600 tons. A year ago stocks were 3000 tons and two years ago 5000 tons.

| | |
|----------------------------------|-----------------|
| Large White, good to choice..... | 1 05 @ 1 07 1/2 |
| Large Yellow..... | 1 05 @ 1 07 1/2 |
| Small Yellow..... | 1 30 @ 1 35 |
| Eastern Yellow..... | 1 00 @ 1 07 1/2 |
| Egyptian White..... | @ |
| Popcorn, shelled, 1/2 lb..... | @ |

Rye.

Market is weak and slow. Oregon has been lately forwarding to this market. Present stocks in the State are stated to be 54,300 cents, being the largest amount ever reported on hand at corresponding date.

Good to choice, new..... 1 32 1/4 @ 1 35

Buckwheat.

Market is as devoid of life as previously noted. In the absence of transactions, only nominal quotations can be given.

Good to choice..... 1 80 @ 1 85

Silverskin..... @

Beans.

Holders are in the main firm in their views, still the future of the market is enveloped in considerable uncertainty. Much will depend on the shipping demand during the next five or six months, and also on the quantity which will be produced in California this season. The output on the Sacramento river will undoubtedly be above the normal if there is no damage to the growing crop. There is little or no definite information concerning the acreage south, but it is believed it will be light. The inquiry the current week has been more for Pink beans than for White varieties.

The Produce Exchange states that stocks in the State on 1st inst. were 561,263 sacks, which is the largest quantity ever reported for corresponding date. Some of the bean statistics of previous years, however, are known to be grossly incorrect.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 85 @ 2 00 |
| Small White, good to choice..... | 1 80 @ 2 05 |
| Large Washington..... | 1 80 @ 1 85 |
| Butter, small..... | 1 60 @ 1 75 |
| Butter, large..... | 1 75 @ 1 90 |
| Pinks..... | 2 65 @ 2 75 |
| Bayos, good to choice..... | 2 90 @ 3 10 |
| Reds..... | 2 75 @ 3 00 |
| Red Kidneys..... | 2 90 @ 3 00 |
| Limas, good to choice..... | 2 90 @ 3 00 |
| Black-eye Beans..... | 3 30 @ 3 50 |
| Horse Beans..... | @ |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

Recent advices by mail from New York furnish the following concerning the bean market in that center, prices quoted being per bushel of 60 lbs.:

There has been a marked falling off in the receipts, the reported arrivals being less than any week this season; but the general wants of the trade has been small, and this has tended to keep the market a little soft on some kinds, though buyers have not secured much advantage. Home jobbers have evidently been working on stock bought ahead and have not felt the necessity for important purchases, and exporters have not been able to do much in white beans. The railroad companies are adhering to their recent orders regarding the removal of stock within four days after arrival in this city, and this has been a contributing cause of weakness at times. Rather than to incur the expense of putting the goods in store, receivers have shaded the price 2 1/2c on some lots. Marrow have eased off to \$1.70 @ 1.72 1/2, and the latter price is now obtained only in a small jobbing way for fancy quality. For a low of the choicest Medium \$1.42 1/2 is still occasionally reached, but \$1.40 is perhaps the more general rate. Most of the recent business in Pea beans to the trade here has been at \$1.37 1/4; occasional small lots have sold at \$1.40, and shippers have taken some stock at that price. White Kidney dragging. A fair quantity of Red Kidney has been exported to the French islands and shippers have paid \$2.10; sales on the market have been at \$2.00 @ 2.05 for choice, and the feeling is rather firm at the close. Quite a number of both Red and White Kidney of not the best quality have been offering of late and these are hard to sell at a material reduction in the price. Turtle Soup very slow. Yellow Eye have had considerable demand and close higher; a number of lots were sold to dealers at \$1.45, but some business has since been done at \$1.50 @ 1.55. Lima declined 5c early in the week, some lots on the dock closing out at \$2, but the market has recovered a little and the feeling is now quite firm, with \$2.10 asked. So little doing in green peas that values have weakened.

Dried Peas.

There is little doing in dried peas, more due to very limited offerings than to lack of demand. Values are steady for prime to select qualities.

Green Peas, California..... \$1 90 @ 2 00

Niles Peas..... 1 85 @ 1 75

Wool.

The long-existing monotony in the wool trade seems to have been at last broken. There is considerable inquiry from Eastern manufacturers and dealers, and it is expected that the same will result in a fair amount of activity at no very distant date. A few wholesale transfers have been lately effected, mainly on local account. Eastern markets are reported in improved condition. It is likely that the giving of quotations for 1898 wools will be possible in a week or two.

| | |
|-----------------------------------|---------|
| Oregon Eastern, choice..... | 12 @ 14 |
| Oregon Eastern, fair to good..... | 9 @ 11 |

FALL.

| | |
|------------------------|---------|
| Northern, free..... | 10 @ 12 |
| Southern Mountain..... | 9 @ 11 |

Hops.

Market is virtually dead, so far as wholesale trading is concerned, and there is little doing in a retail or jobbing way. Offerings from first hands do not make much of a showing, but small as they are, they are almost wholly neglected. It will be surprising to have any special activity or firmness developed during the balance of the season. New bops will be on market in about ninety days.

Good to choice, 1897 crop..... 10 @ 13

A New York authority gives the following review of the bop market, the advices being furnished by mail of late date:

The weather has been rainy almost every day this week, which has seriously interfered with the movement of stock and caused an exceedingly dull trade. The absence of business has not changed the ideas of holders, however, and there has been no anxiety to sell, except, possibly, the poor Oregon, which are still a drug on the market. This latter class of stock has been a burden ever since it began arriving here, and it is certainly a misfortune to the trade that it was picked. Some of the lots are entirely without lupuline, nearly every hurr is black with mold and the color of the hops is poor. We hear of offers to sell at 6c, and perhaps we would be accepted. Outside of these, the Pacific coast stock is held at 9 @ 14c for ordinary to really prime, and a few growths of choice remain in first hands, for which 16c is asked and obtained when anyone wants them. The State stock is largely of grades worth, say, 10 @ 14c; a really choice article can hardly be found. Advices from the hop sections of this State and from all points in the West do not indicate any material change in the condition of the yards.

Hay and Straw.

Although recent arrivals of hay have included stocks from Oregon, Nevada and Utah, the aggregate of receipts has not been heavy. Demand was fair, showing some improvement over that of preceding week. New Alfalfa sold at an advance, a little very select bringing \$15. Values for best qualities of stable hay were well sustained at former range of quotations. Straw tended to lower prices than have been lately current.

NEW HAY.

| | |
|--------------|---------------|
| Wheat..... | 17 00 @ 20 00 |
| Barley..... | 15 00 @ 16 00 |
| Oat..... | 15 00 @ 16 00 |
| Alfalfa..... | 12 00 @ 13 00 |

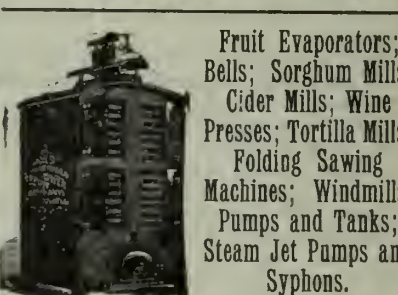
OLD HAY.

| | |
|--------------------|---------------|
| Wheat..... | 19 00 @ 22 50 |
| Wheat and Oat..... | 18 00 @ 21 00 |

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The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blisters from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular.

THE LAWRENCE-WILLIAMS CO., Cleveland O.



JAMES LINFORTH, 37 Market St., S. F.

Write for Descriptive Catalogues.

| | |
|----------------------|---------------|
| Oat..... | 17 00 @ 19 00 |
| Barley..... | @ |
| Timothy..... | 15 00 @ 18 00 |
| Compressed..... | 19 00 @ 23 00 |
| Straw, 1/2 bale..... | 65 @ 80 |

Millstuffs.

Most descriptions were in more than ample supply for the immediate demand. Market was, in the main, favorable to buyers. Bran proved an exception, commanding an advance.

| | |
|---------------------|---------------|
| Bran, 1/2 ton..... | 14 50 @ 15 50 |
| Middlings..... | 16 50 @ 18 00 |
| Barley, Rolled..... | 26 00 @ 26 50 |
| Cornmeal..... | 24 00 @ 24 50 |
| Cracked Corn..... | 25 00 @ 25 50 |

Seeds.

There is little doing in seeds of any sort. Most kinds are in such limited supply as to make it impossible for any noteworthy activity to be experienced. Especially is Mustard seed in insignificant stock and is likely to so continue for some months to come. Quotations are mainly about the same as previously noted.

| | |
|----------------------------|----------------|
| Mustard, Yellow..... | 4 00 @ 4 25 |
| Mustard, Trieste Seed..... | 4 25 @ 4 50 |
| Mustard, Wild Brown..... | 3 00 @ 3 25 |
| Flax..... | 2 25 @ 2 40 |
| Canary..... | 2 1/2 @ 2 1/2 |
| Rape..... | 2 1/2 @ 2 1/2 |
| Hemp..... | 19 00 @ 23 1/4 |
| Alfalfa, Utah..... | @ |

Bags and Bagging.

There is no improvement to record in quotable values for grain bags, but more inquiry is observable and a fairly active demand is expected during the next sixty days. Stocks are certain, however, to prove more than enough for the season's needs. Other bags and bagging are at present ruling quiet.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, 22x36, spot..... | 5 @ 5 1/4 |
| State Prison bags, per 100..... | 4 85 @ |
| Wool sacks, 4 lb..... | 30 @ |
| Wool sacks, 3 1/2 lb..... | 27 @ 10 |
| Gunnies..... | 4 1/4 @ 4 1/4 |
| Bean bags..... | 5 1/4 @ 6 |

Hides, Pelts and Tallow.

No changes of moment have taken place in quotable values or the general tone of this market since former review. Beef hides continue to command moderately stiff figures, especially Wet Salted, and advanced figures are expected soon. Pelts were barely steady. Tallow was in very fair request.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-------------|-----------|
| Heavy Steers, over 56 lbs..... | 10 @ 10 1/4 | 9 @ 9 1/4 |
| Medium Steers, 48 to 56 lbs..... | 9 @ 9 1/4 | 8 @ 8 1/4 |
| Light Steers, under 48 lbs..... | @ 9 | @ 8 |
| Heavy Cow Hides, over 50 lbs..... | 9 @ 9 1/4 | 8 @ 8 1/4 |
| Light Cow Hides, under 50 lbs..... | @ 9 | @ 8 |
| Wet Salted Kip..... | @ 9 1/4 | @ 8 1/4 |
| Wet Salted Veal..... | @ 10 | @ 9 |
| Wet Salted Calf..... | @ 10 | @ 9 |
| Dry Hides..... | @ 10 1/4 | @ 13 1/4 |
| Dry Kip and Veal, 11 to 16 lbs..... | 15 @ 16 | @ 12 |
| Dry Calf, under 4 lbs..... | 18 @ 20 | @ 16 |
| Horse Hides, large..... | 2 00 @ 2 50 | |
| Horse Hides, medium..... | 1 50 @ 2 00 | |
| Horse Hides, small..... | 25 @ 50 | |
| Colts' Hides..... | 25 @ 50 | |
| Pelts, long wool, per skin..... | 90 @ 115 | |
| Pelts, medium, per skin..... | 70 @ 90 | |
| Pelts, short wool, per skin..... | 40 @ 60 | |
| Pelts, shearing, per skin..... | 15 @ 30 | |
| Deer Skins, best summer..... | 25 @ 30 | |
| Deer Skins, good medium..... | 25 @ 30 | |
| Deer Skins, thin winter..... | @ 10 | |
| Elk Hides..... | 10 @ 12 | |
| Tallow, good quality..... | 3 @ 3 1/4 | |
| Tallow, No. 2..... | 2 @ 2 1/4 | |
| Goat Skins, perfect..... | 30 @ 37 1/2 | |
| Goat Skins, damaged..... | 10 @ 20 | |
| Kid Skins..... | 5 @ 10 | |

Honey.

Not much now coming forward from any quarter. Supplies will doubtless be light throughout the season, admitting of little other than small local trade. Former quota-

tions remain in force, with tendency on best qualities to higher figures.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 5 1/2 @ 8 |
| Extracted, Light Amber..... | 4 1/2 @ 5 1/2 |
| White Comb, 1-lb frames..... | 8 1/2 @ 10 |
| Amber Comb..... | 6 1/2 @ 7 1/2 |

Beeswax.

Offerings and demand are both of a light order. Market is easy in tone, but no appreciable changes are warranted in quotations. Fair to choice, 1 lb.....23 @ 25

Live Stock and Meats.

Beef is in fair request, and for prime to choice stock the market is firm at the ruling rates. Mutton is selling at about same figures as last quoted, with offerings not particularly heavy in quantity, but sufficient for current requirements. Hogs were in as good demand as previous week, and market for all kinds, other than soft and stock hogs, was firm at the advanced rates.

| | |
|---|---------------|
| Beef, 1st quality, dressed, net 1 lb..... | 6 @ 6 1/2 |
| Beef, 2d quality..... | 5 @ 5 1/2 |
| Beef, 3d quality..... | 4 @ 5 |
| Mutton—ewes, 7 1/2 lb; wethers..... | 7 1/2 @ 8 |
| Hogs, hard grain fed, medium..... | 4 1/2 @ 4 3/4 |
| Hogs, small..... | 4 1/2 @ 4 1/2 |
| Hogs, large hard..... | 4 1/2 @ 4 1/2 |
| Hogs, feeders..... | 4 @ 4 |
| Hogs, soft..... | 3 1/2 @ 3 1/2 |
| Hogs, stock..... | 2 @ 2 |
| Hogs, country dressed..... | 5 @ 5 1/2 |
| Veal, small, 1 lb..... | 6 @ 7 |
| Veal, large, 1 lb..... | 5 @ 6 |
| Lamb, Spring, 1 lb..... | 8 @ 8 |

Poultry.

A firmer market prevailed during most of the week, especially for old chickens, which were in increased demand at improved figures, due mainly to a temporary absence of Eastern poultry. Old Hens sold at an advance of \$1.00 to \$1.50 per dozen over the low rates which had been current. During the past few days Eastern poultry has been again coming forward, causing market for the home product to rule less in favor of sellers than immediately following last review.

| | |
|------------------------------------|-------------|
| Turkeys, live hens, 1 lb..... | 11 @ 12 |
| Turkeys, live gobblers..... | 11 @ 12 |
| Hens, Cal., doz..... | 4 00 @ 4 50 |
| Roosters, old..... | 3 00 @ 4 00 |
| Roosters, young, (full-grown)..... | 6 00 @ 7 50 |
| Fryers..... | 4 00 @ 4 50 |
| Broilers, large..... | 3 00 @ 3 50 |
| Broilers, small..... | 1 75 @ 2 50 |
| Ducks, young, doz..... | 3 00 @ 4 50 |
| Ducks, old..... | 3 00 @ 3 25 |
| Geese, pair..... | 75 @ 1 00 |
| Goslings, pair..... | 1 00 @ 1 25 |
| Pigeons, Old, doz..... | 1 00 @ 1 |
| Pigeons, Young..... | 1 25 @ 1 50 |

Butter.

A weak and lower market is noted for all grades of butter, with tolerably liberal arrivals, including consignments from some outside points not in the habit of contributing to this market. Packing demand was less active than it had been and this aided in the development of weakness. Depression of values was less marked, however, on strictly choice to select than it was on defective qualities.

| | |
|-------------------------------------|-------------|
| Creamery extras, 1 lb..... | 19 @ |
| Creamery firsts..... | 18 @ 18 1/2 |
| Creamery seconds..... | 17 @ 17 1/2 |
| Dairy select..... | 17 @ 17 1/2 |
| Dairy seconds..... | 15 @ 16 |
| Dairy, soft and weedy..... | @ |
| Mixed store..... | 14 @ 15 |
| Creamery in tubs..... | 13 1/2 @ 20 |
| Firkin, Cal., choice to select..... | 18 @ 20 |
| Firkin, common to fair..... | 15 @ 17 |

Cheese.

Market continues to show much the same general condition as last noted, being easy in tone, with supplies more than sufficient to accommodate the rather light demand at present existing. Some brands in high favor are commanding from special custom a slight advance on quotations. Strictly select, mild flavored new cheese is likely to be soon in lighter receipt and to rule firmer.

| | |
|-----------------------------------|-----------|
| California fancy flat, new..... | 9 @ 9 1/2 |
| California, good to choice..... | 8 @ 9 |
| California, fair to good..... | 7 1/2 @ 8 |
| California Cheddar..... | 9 @ 11 |
| California, "Young Americas"..... | 9 @ 11 |

Eggs.

A little more firmness has been developed in the egg market, arrivals of home product showing decrease, and receipts of Eastern not being of very large proportions. The tendency of the market in favor of sellers was most pronounced on favorite marks of guaranteed quality. Some extra select, engaged ahead by special custom, brought a moderate advance on quotable rates.

| | |
|---|---------|
| California, select, large white and fresh..... | 17 @ |
| California, select, irregular color & size..... | 15 @ 16 |
| California, good to choice store..... | 14 @ 15 |
| Eastern, as to section and grading..... | 14 @ 15 |

Vegetables.

Nearly all descriptions of vegetables now in season were in fairly liberal receipt, and market as a whole lacked firmness. Most changes made in quotations were to lower prices. About the only exception was the advanced figures current on Rhubarb. The most pronounced weakness was in the market for Onions, there being a decided glut of New Reds the greater part of the time.

| | |
|--------------------------------------|-------------|
| Asparagus, No. 1 to choice, box..... | 1 50 @ 2 25 |
| Asparagus, common to fair, box..... | 75 @ 1 25 |
| Beans, Lima, box..... | 5 @ 7 |
| Beans, Refuge, box..... | @ |
| Beans, Wax, box..... | 4 @ 6 |
| Cabbage, choice garden, box..... | 60 @ 70 |
| Cauliflower, doz..... | 50 @ |
| Corn, Green, sack..... | @ |
| Corn, Alameda, crate..... | @ |
| Cucumbers, box..... | 65 @ 1 00 |
| Egg Plant, lb..... | @ |
| Garlic, lb..... | 3 @ 5 |
| Mushrooms, Buttons, lb..... | @ |
| Mushrooms, Wild, lb..... | @ |
| Okra, Dried, lb..... | @ |
| Onions, Yellow, good to choice..... | @ |
| Onions, New Red..... | 50 @ 65 |
| Peas, Sweet, Garden, lb..... | 1 @ 1 1/4 |
| Peas, Sweet, sack..... | 75 @ 1 00 |
| Peppers, Green Chile, lb..... | 10 @ 12 1/2 |

| | |
|-----------------------------|-------------|
| Rhubarb, ordinary, box..... | 75 @ 85 |
| Rhubarb, Mammoth, box..... | 1 00 @ |
| Squash, Summer, box..... | 75 @ 1 00 |
| Tomatoes, box or crate..... | 1 75 @ 2 25 |

Potatoes.

New potatoes are now arriving freely, both in boxes and sacks, and as they are being offered at generally easy figures, they are being given the preference by a large majority of consumers. Most of the new now coming forward are showing good quality. Old potatoes are still being received, mainly from Oregon, and in tolerably large quantity for this late date. A few choice to select old sell to fair advantage, but common qualities drag badly.

| | |
|--|---------|
| Burbank, River, sack..... | @ |
| Burbank, Petaluma and Tomales, cti..... | 40 @ 65 |
| Burbank, Humboldt, cti..... | 40 @ 70 |
| Burbank, Oregon, cental..... | 40 @ 70 |
| Garnet Chile, Oregon..... | @ |
| New Potatoes, in sacks, cental..... | 60 @ 90 |
| New Potatoes, River, in boxes, cental..... | 55 @ 75 |
| Sweet River, cental..... | @ |
| Sweet Merced..... | @ |

The Fruit Market.

Fresh Fruits.

The assortment on market this week of fresh fruits, deciduous and berry, varies little from that noted in last issue. Values for most kinds have not fluctuated materially, but where changes did occur, they were in the main to lower figures. Apricots sold at a decline from last quoted rates, 75c being the utmost warranted as a quotation for boxes, with crates commanding about 10c more. Apricots thus far received have averaged decidedly small, which operated against their advantageous sale. Some boxes which looked well on top would not bear close investigation, as the fruit under the first layer was small, green and generally inferior, showing the "deaconing process" is still in fashion in some quarters. Topping off is admissible in a mild manner, but where carried to extremes is not apt to result in any good to the producer, as there are few purchasers and no regular buyers who can be thus deceived. Peaches of choice quality were in good request and were salable at higher figures than were warranted as quotations in a regular way, most of the present offerings being little better than windfalls, unripe and more or less bruised. Better qualities are expected in the near future. Early Plums were slow of sale and were offered at low figures. Cherries were in very liberal receipt for a light crop season, with market weak for all sorts except strictly select black or choice Royal Annes. Cannons are taking very few cherries, and are contracting for them only when by so doing they can secure desirable deliveries of other fruit. Considerable quantities of canned cherries of 1897 pack still remain on hand. Gooseberries of common quality were plentiful and cheap, and there were few of any other sort. Blackberries and Raspberries were in fair request, but did not command quite as good figures as preceding week. Strawberries in prime order did not lack for custom and brought fair average prices.

| | |
|---|--------------|
| Apricots, Pringle, box..... | @ |
| Apricots, Royal, box..... | 65 @ 75 |
| Apples, green, box..... | 40 @ 50 |
| Cherries Black, in bulk, lb..... | 1 1/2 @ 3 |
| Cherries White, in bulk, lb..... | 1 @ 2 |
| Cherries, Black, fair to choice, box..... | 25 @ 50 |
| Cherries, White and Red, box..... | 20 @ 30 |
| Blackberries, crate..... | 75 @ 90 |
| Raspberries, chest..... | 7 00 @ 10 00 |
| Raspberries, crate..... | 1 25 @ 1 50 |
| Gooseberries, lb..... | 1 @ 2 |
| Gooseberries, English, lb..... | 3 1/2 @ 4 |
| Strawberries, Longworth, chest..... | 5 00 @ 7 50 |
| Strawberries, Large, chest..... | 3 00 @ 4 00 |
| Plums, Clyman, box..... | 40 @ 65 |
| Plums, Cherry, drawer..... | 20 @ 35 |

Dried Fruits.

The market for cured and evaporated fruits is not showing much life, spot trading being confined mostly to local and coast needs. Present stocks of tree fruit are mainly Prunes, Peaches and Apples, with no heavy quantities of either sort at present obtainable. Values for above kinds are ruling steady, quotations being without change. The few Apricots remaining are being held at an advance and prospects are that this season's curing of choice Apricots will command still higher prices. Not only is this season's crop sure to prove light, but there are advances of the fruit in some localities being infested with scale, which renders the fruit practically worthless for either canning or drying, being very undesirable for home use and such cannot be utilized for export trade. Prunes are said to be promising a fair average yield in most sections, although a light shower or two would improve the conditions. There is one exception, the Armona district, where a year ago about 200 carloads were turned out, but this year, it is claimed, there will not likely be over 30 carloads. Foreign houses are soliciting prices for future deliveries of new crop fruit, principally Apricots and Prunes, but operators here prefer waiting until fruit is ready for delivery before naming figures.

EVAPORATED OR BLEACHED.

| | |
|---|---------------|
| Apricots, Royal, in sacks, per lb..... | 6 1/2 @ 8 |
| Apricots, Royal, fancy..... | 8 1/2 @ 9 |
| Apricots, Moorpark..... | 9 @ 11 |
| Apples, in boxes..... | 6 1/2 @ 7 |
| Figs, fancy pressed..... | 8 @ 10 |
| Nectarines, White..... | 4 1/2 @ 5 |
| Nectarines, Red..... | 3 1/2 @ 4 |
| Peaches, unpeeled, choice..... | 4 1/2 @ 5 |
| Peaches, unpeeled, fancy..... | 6 @ 8 1/2 |
| Peaches, peeled, in boxes..... | 10 @ 12 1/2 |
| Pears, unpeeled Bartletts, halved, fancy..... | @ |
| Pears, halved, unpeeled Bartletts..... | @ |
| Pears, quartered, unpeeled Bartletts..... | 4 @ 5 |
| Pears, peeled and sliced..... | @ |
| Plums, pitted..... | 5 @ 6 |
| Prunes, in sacks, 40-50's..... | 5 1/2 @ 6 |
| 50-60's..... | 4 1/2 @ 4 1/2 |
| 60-70's..... | 3 1/2 @ 3 1/2 |
| 70-80's..... | 3 @ 3 1/2 |
| 80-90's..... | 2 1/2 @ 3 |
| 90-100's..... | 2 @ 3 |

Above figures are on basis of 3 1/2 @ 3 3/4 for 4

| | |
|---|-----------|
| sizes. Prunes in boxes, 1/4c higher for 25-lb boxes, 1/4c higher for 50-lb boxes..... | |
| 4 sizes Santa Claras and equal..... | 3 1/2 @ |
| 4 sizes San Joaquin and Northern..... | 3 @ |
| Prunes, Silver..... | 4 @ 7 |
| COMMON SUN-DRIED. | |
| Apricots, ordinary..... | 5 @ 6 |
| Apples, sliced..... | 4 @ 4 1/2 |
| Apples, quartered..... | 4 1/2 @ |
| Figs, Black..... | 3 @ 3 1/2 |
| Figs, White..... | 3 @ 4 |
| Peaches, unpeeled..... | 3 1/2 @ 4 |
| Plums, unpitted..... | 1 @ 1 1/2 |

The dried fruit market on the Atlantic side is thus outlined, according to recent mail advices from New York:

The market for evaporated apples has shown very little change this week. Offerings are light, and while demand has been less active, desirable grades have been held with confidence at full late figures. Sun-dried rather quiet, though southern are held steadily at full late prices; State quarters are very dull and offering lower. Chopped apples have been held firmly, as stock is in few hands, but, to sell with freedom, outside quotation is extreme. Cores and skins have ruled dull and slightly weaker. Cherries about cleaned up and quotation nominal. Huckleberries have had some movement at the lower prices quoted. Raspberries and Blackberries held steadily at unchanged figures. California apricots and peaches are in very good demand and firm, with occasional choice lots held fractionally higher than quoted.

| | |
|--|-------------|
| Apricots, Cal. Moorpark, 1897, per lb..... | 10 @ 12 1/2 |
| Apricots, Cal. Royal, 1897, per lb..... | 8 @ 9 |
| Peaches, Cal., 1897, peeled, per lb..... | 10 @ 16 |
| Peaches, Cal., 1897, unpeeled, per lb..... | 5 @ 9 |
| Pears, Cal., 1897, per lb..... | 5 @ 10 |
| Prunes, Cal., 1897, per lb..... | 4 @ 8 1/2 |

Raisins.

Stocks locally are fairly well cleaned up. There are moderate quantities of loose raisins still held in the interior, including some of very good quality, values for which are ruling quite steady. The vineyards generally are reported to be in fine condition for this time of year.

F. O. B. FRESNO DELIVERY.

| | |
|--------------------------------------|---------------|
| Imperial Clusters, per box..... | @ |
| Dehesa Clusters, per box..... | @ |
| Fancy Clusters, per box..... | @ |
| Boxes, London layers, 20-lb box..... | 1 00 @ |
| (Usual advance for fractions.) | |
| Loose Muscatel, 4-crown, lb..... | 3 1/2 @ |
| Loose Muscatel, 3-crown..... | 2 1/2 @ 2 3/4 |
| Loose Muscatel, 2-crown..... | 1 1/2 @ 2 |
| Sultanas..... | 3 @ 3 1/2 |
| Seedless Muscatel..... | 1 1/2 @ 2 |
| Dried Grapes..... | 1 @ 1 1/2 |

Citrus Fruits.

Orange market is well stocked for this late date and is favorable to buyers, especially for other than most select Navels. Lemons are in sufficient supply for all immediate needs, and market is easy in tone, particularly for other than strictly choice. Lemons are going at unchanged figures.

| | |
|-------------------------------|-------------|
| Oranges—Navel box..... | 2 00 @ 3 00 |
| St. Michaels..... | 1 25 @ 2 00 |
| Seedlings..... | 75 @ 1 25 |
| Tangerines, half box..... | @ |
| Lemons—Cal., select, box..... | 1 75 @ 2 00 |
| Cal., good to choice..... | 1 00 @ 1 50 |
| Cal., common to good..... | 75 @ 1 00 |
| Limes—Mexican, box..... | 4 00 @ 4 50 |
| Cal., small box..... | 75 @ 1 00 |

Nuts.

The general features remain as last noted. Market for all choice nuts is firm at the quotations. Almonds are scarce. Choice Walnuts are not in large supply. Peanuts arriving are mostly ordinary quality.

| | |
|--------------------------------------|---------------|
| California Almonds, paper shell..... | 9 @ 10 |
| California Almonds, soft shell..... | 7 @ 8 1/2 |
| California Almonds, hard shell..... | 4 @ 4 1/2 |
| Walnuts White, paper shell..... | 7 1/2 @ 8 1/2 |
| Walnuts White, soft shell..... | 7 1/2 @ 8 1/2 |
| Walnuts White, Cal., standard..... | 6 @ 7 |
| Chestnuts, Cal. Italian..... | @ |
| Peanuts, Cal., fair to prime..... | 4 1/2 @ 4 3/4 |
| Peanuts, Eastern hand-picked..... | 5 @ 6 |
| Pine Nuts..... | 7 @ 8 |

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | | Since July 1, '97. | Same Time Last Year. |
|--------------------|--------|--------------------|----------------------|
| Flour, 4-sks..... | 73,455 | 4,963,076 | 5,622,758 |
| Wheat, cts..... | 45,435 | 10,281,202 | 10,630,842 |
| Barley, cts..... | 29,400 | 4,491,338 | 4,845,267 |
| Oats, cts..... | 10,525 | 680,310 | 532,725 |
| Corn, cts..... | 9,600 | 370,123 | 281,317 |
| Rye, cts..... | 170 | 47,881 | 187,898 |
| Beans, sks..... | 4,894 | 562,460 | 563,460 |
| Potatoes, sks..... | 25,015 | 1,094,909 | 1,084,467 |
| Onions, sks..... | 3,971 | 111,909 | 134,479 |
| Hay, tons..... | 1,712 | 120,172 | 136,394 |
| Wool, bales..... | 2,583 | 71,083 | 77,084 |
| Hops, bales..... | | 9,095 | 7,545 |

EXPORTS.

| FOR THE WEEK. | | Since July 1, '97. | Same Time Last Year. |
|---------------------|--------|--------------------|----------------------|
| Flour, 4-sks..... | 67,928 | 3,154,260 | 4,288,327 |
| Wheat, cts..... | 886 | 9,757,832 | 9,938,587 |
| Barley, cts..... | 2,592 | 2,999,341 | 3,600,463 |
| Oats, cts..... | | 18,704 | 33,200 |
| Corn, cts..... | 1,830 | 45,304 | 29,374 |
| Beans, sks..... | 492 | 301,604 | 300,183 |
| Hay, bales..... | 684 | 76,301 | 67,884 |
| Wool, bales..... | | 14,241,776 | 16,628,219 |
| Hops, bales..... | 1,752 | 1,387,794 | 1,280,034 |
| Honey, cases..... | 1 | 7,447 | 2,781 |
| Potatoes, pkgs..... | 1,060 | 183,501 | 79,311 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of the THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

NEW YORK, June 8.—California dried fruits steady; apples strong. Evaporated apples, common, 7 1/2 @ 8c; prime wire tray, 9 @ 9 1/2c; wood dried prime, 9 1/2c; choice, 10c; fancy, 10 1/2c. Prunes, 4 @ 8 1/2c; lb. Apricots, Royal, 8 @ 10c; Moorpark, 10 @ 12c. Peaches, unpeeled, 6 @ 9c; peeled, 12 @ 16c.

Eastern Sales of California Fruit.

NEW YORK, June 3.—The Earl Fruit Company sold California fruit to-day: Apricots, Royal, \$1.90 to \$3.05, average, \$2.15; Seedling, \$1.55 to \$2.10, average \$1.96; Newcastle, \$1.50 to \$2.10, average \$1.71; Garland Peaches, \$2.43. Cherries—Royal Anne, 90c to \$1.35, average \$1.12; Black Tartarian, 50c to 55c, average 55c; Centennial, \$1.70.

CHICAGO, June 3.—Porter Brothers sold California fruit to-day as follows: Apricots—Montgamets, \$2.25 per single crate; Royals, \$1.65 to \$2; Seedlings, \$1.25 to \$1.40. Peaches—Alexanders, \$1.75 per box. Plums—Clymans, \$1.20 to \$1.35 per single crate. Cherries—Tartarians, 40c to \$1.30; Bigeaux, 65c to \$1.20; Royal Anne, 50c to 90c; Black Republicans, 30c; Black Eagles, 75c; Governor Wood, 45c; Black Bigeaux, 80c to \$1.

NEW YORK, June 7.—Porter Bros. Company sold to-day: Prunes—Tragedys, \$3.37 to \$4.12 per single crate. Apricots—Royals, \$1.45 to \$2.06 per single crate; Seedlings, \$1.45. Plums—Clymans, \$1.30 to \$1.60 per single crate; Cherry, \$1.30; St. Calherines, \$1.10. Cherries—Royal Annes, 70c to \$3.15 per box; Centennials, 60c to \$1.30; mixed \$1.05 to \$1.20; Tartarians, 66c to \$1.20; Black Eagles, \$1.10; Bigeaux, 85c to \$1.10; Republicans, 55c to \$1; Governor Woods, 80c. Peaches—Alexanders, \$1.40 to \$1.50 per box.

NEW YORK, June 7.—The Earl Fruit Company sold California fruit to-day: Cherries—Royal Annes, 90c to \$1.10; average, 98c; Llewellyn, 90c; Black Tartarians, 60c to 90c; average, 69c.

CHICAGO, June 7.—Porter Bros. Company sold California fruit to-day: Prunes—Tragedys, \$4.30 per single crate. Plums—Yosabe, \$2.25 per single crate; Clymans, \$1.45 to \$1.65. Apricots—Montgamets, \$2.05 to \$2.10; Newcastle, \$2.05; Royals, \$1.70 to \$1.95. Peaches—Alexanders, \$1.50 to \$1.60. Cherries—Royal Annes, \$1.35 per box; Tartarians, 70c to \$1.20; Bigeaux, 80c to \$1.05.

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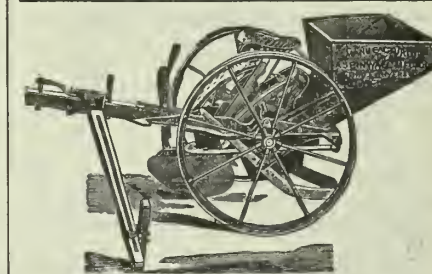
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Some Pacific Coast Timber.

The timber of British Columbia, Washington and Oregon is practically the same, Douglas fir, the leading lumber of the northwest coast and the one timber accessible to all its mills. It grows only west of the coast range of mountains, in large tracts. The fir timber cut by the Washington and Oregon mills rarely yields 25 per cent clear, nor 50 per cent good enough for shipment to foreign ports. The disposition of the rough and lower grades is the conundrum of the mill man. For years California has been the market where these low grades were marketed, but this market is growing more particular. The better mills are, however, working their stock more carefully and are getting better returns in the upper grades than in former years. In the better districts it is often found 8 feet in diameter, sometimes 9, occasionally 10, very seldom larger.

The cedar of the two northern States is the next in importance. It grows to immense size. There are few tracts of cedar exclusively; the majority of it grows with fir, spruce or hemlock. It is the greatest shingle timber. The trade in shingles has grown in a decade from nothing to nearly three billions annually. They are marketed in every Eastern and Northern State. A few shipments are made abroad, but so far that demand is limited. Cedar sash, doors, finish and siding are rapidly finding a market. The doors and sash of this wood will stand in any climate. They will hold their own under any test. The cedar timber is worked at great loss; clear cedar is not easily obtained and wide stock is always a problem to the mill owners.

Spruce grows only in favored localities and generally within limited areas. It is found at its best in the counties that border on the Pacific ocean. South of the Straits of Juan de Fuca, near the California line, is found the great bodies of spruce. Some small patches and detached trees are found elsewhere, but much of this is of the tide land variety, which is only good for boxes and the cheaper grades of lumber. There are but a very few mills that can fill orders for spruce. It is one of the most valuable timbers there, much resembles white pine, and can readily be sold for it.

Hemlock is yet unknown in the markets, only a limited amount is manufactured and but a small portion of that is sold as hemlock. It will pass either for fir or hemlock in a mixed pile. It makes good flooring and a handsome finishing lumber. It has none of the bad features of Eastern hemlock. It is like spruce in being tasteless.

Larch grows in a few localities and is good timber, light in color and weight, difficult to distinguish from spruce or the lighter colored firs.

In the southern part of Oregon is found the great body of sugar pine—a valuable timber, but its sale is much restricted on account of the railway facilities. The lumber is coarse-grained, light in color and takes a good finish. Sash, doors and finish and all kinds of building material are manufactured from it.

East of the coast range of mountains is found bull pine, tamarack, some white pine and cedar. There are few large bodies and but little good lumber is manufactured. Bull pine is the principal stock cut. It has a heavy sap, which turns blue or black, warps easily and is fit only for rough work.

In southern Oregon and California is found considerable oak, which is not found in the territory farther north.

California redwood is the great staple of the northwestern part of the State, but in the mountains there is cut much other lumber that is seldom noted. The demand for boxes in California is largely supplied from this mountain timber, though redwood, spruce and sugar pine boxes are manufactured quite extensively.

The redwood of California is destined to have a greater future than its past indicates. Its shipments have been hampered by need of shipping facilities. The lumbermen of the State have had a good market at home, some

abroad, and have not pushed redwood into the Eastern markets. Redwood shingles are equal to any made. The redwood timber is so nearly clear that from it shingles can be manufactured at a low cost. Redwood lumber has valuable features—it is as nearly fire-proof as wood can be, it is durable above or below ground.

Strength of Wire Rope.

Exhaustive investigation into the resistance of wires and wire ropes, both as regards tension loads and bending action, has been made at the government testing laboratory at Berlin, intended to investigate the resistance both of single wires and of the same wires twisted into rope. In general the following deductions were made: The endurance of wires under repeated bending over a uniform radius of curvature diminishes rapidly with the increase of load up to loads of about 6000 pounds per square inch, but for further increase of load the reduction in endurance proceeds more and more slowly. The endurance under repeated bending from increasing loads, diminishes the more rapidly the less the resistance and the greater the extensibility of the material. The influence of increasing radius of bending upon the endurance was rapid at first, but showed a continually diminishing importance above fifty diameters of the wire.

These tests, as well as the tests of wire ropes, were made upon wires of various strengths, in order to obtain a progressive series of points through which curves could be drawn. The tests with the ropes were made upon the materials used for the single wires, so that a series of relations between a given wire and a rope made from the same wire were established. In some instances the strength of a rope per unit of cross-section was greater than that of the single wires of which it was composed, but in others it was much less, depending upon the material and the conditions of test. This work was undertaken especially to furnish data for the use of wire rope in connection with the mining industry of Germany.

Took the Prize at Drilling.

A long, lank, brawny-looking man, with a good-natured face and hair as red as the prairie rose, called at the Lawrence-street recruiting office this morning. He walked up to the table and accosted the officer in charge something like this:

"I want to sign my name here, so I kin help clean out the d—n Spanish."

"Have you ever drilled any?" asked the officer politely.

"Yes; I took the prize here at the festival an' cabbaged it, hands down."

"What company were you with?"

"The Cripple Creek Gold Company."

"I don't believe I understand you?"

"Well, you understand English all right, don't you?"

"Yes, but how long have you been a soldier?"

"Thunderin' tunnels, I never was a soldier?"

"But you say you have drilled?"

"That's what I said, but I thought you meant had I ever drilled with a drill in the mines. No, I never was a bluecoat, but I kin outdrill anything in the camp."

They soon understood each other, and the proud old miner passed an examination of 100 before the board of medical examiners.—Denver Times.

Many a young man who has entered on a career has been glad soon afterward to get a steady job.

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O. Sold by Druggists, 75c. Hall's Family Pills are the best.

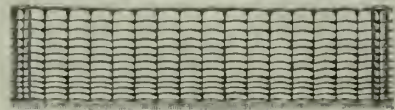
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The No. 5 Improved U. S. Separator we bought of you last November is giving the best of satisfaction. We are making 60 per cent. more butter than we made the old way, and get the price of first-class creamery. I do not see how any separator could do better. Before buying we looked at a De Laval, Sharples, and Empire, but chose the U. S., and are glad we did.

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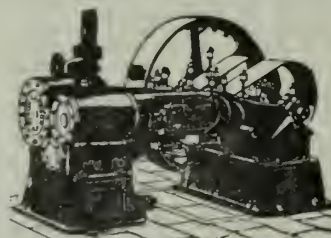
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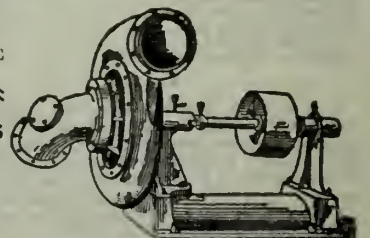
costs complete but ten dollars, and it will tell absolutely and correctly exactly what each cow is worth as a butter producer. Test every cow before you buy her. Send for circulars.

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Coast Industrial Notes.

—Bakersfield, Cal., last week celebrated with appropriate ceremony the completion of the S. F. & S. J. V. Ry. from tide water to that city.

—Twelve river steamers and five barges started from Seattle, Wash., recently on a 3000-mile ocean voyage to St. Michaels, mouth of the Yukon.

—Material for the Stockton & Tuolumne County Railroad is arriving at Stockton, Cal., daily. Twenty-one carloads of rails, fish plates, etc., are now there, and twenty-five more carloads are on the road.

—The Stockton and Tuolumne County Railroad will be sixty miles long from Stockton, Cal., through Copperopolis, Angels Camp and Sonora to Summerville. Surveys have reached Copperopolis. There are rails and ties for twelve miles of track on the ground.

—Timely rains give assurance of wheat crop in Washington in excess of 20,000,000 bushels. The bulk of the grain will go to the Philippines, Japan and China. May rains also greatly aided California growing grains and fruits, and in many sections the yield will approximate that of an average year.

—A Tacoma, Wash., dispatch says: Twelve thousand men, 4000 boats and 10,000 tons of outfit are now leaving Lakes Bennett and Tagish for Dawson and vacating the immense boatyards at the lakes. The price of lumber and boats has fallen. The Canadian Government is opening a waterway between Lakes Linderman and Bennett.

—Last week the U. S. government, being in immediate need of three 12-inch manila hawsers, each 1200 feet long, to be used in towing to the Philippines, placed the order with the Tubbs Cordage Co., with the request that if possible they be finished in a week, with the result that in forty-eight hours after the receipt of the order the hawsers were made and delivered.

—Coast trade with Siberia is growing. Last year three vessels were sufficient to carry all the freight offering. During the last two months the barkentines Addenda and J. M. Griffiths, the barks Edward, May and Wilna and the steamers Taifu and Ailsa Craig have all left San Francisco for the Amoor river. Their cargoes mainly consisted of flour, salt, lumber and general merchandise.

—Sweet wine experts have completed their figures relative to last year's output of sweet wines by the wine growers of California, with the following result: Port, 3,153,545.81 gallons; sherry, 2,372,170.33; muscat, 721,555.24; angelica, 748,686.20; tokay, 11,771.99; Malaga, 11,614.56; total season 1897-98, 7,024,344.13; season 1896-97, 4,968,339.21; season 1895-96, 6,083,919.87; season 1894-95, 4,242,600.41; season 1893-94, 4,724,595.62.

—A meeting of the Pacific Coast Manufacturers and Producers' Association was held in San Francisco recently to protest against the patronizing of Eastern firms by the Government when the goods can be secured on this coast. The manufacturers claim they have been discriminated against and point to the fact that the shoe factories of this coast can turn out 3000 pairs of shoes a day, at less cost than they can be shipped from the East and a great deal of time saved.

—A singular commentary on the cost of transportation as an element in the cost to the consumer is afforded in the ultimate "value" in this state of Cumberland coal, used largely by blacksmiths. The Maryland Coal Co. gets 85 cents a ton for it at the mine. It is railroaded to Point Locust, Md., shipped thence round the Horn to San Francisco; sent from here to California interior points; then sacked and carried on mules and burros to several almost inaccessible points where mining is carried on, finally costing the consumer 5 cents per pound, or \$100 for what originally cost 85 cents.

—Neither Schley nor Sampson has yet Deweyized Cervera at Santiago de Cuba, but the warlike character of the present permeating every department is illustrated by the recommendation last week of the Secretary of War to the House of Representatives for funds for harbor defense and other work in carrying on the war, aggregating many millions of dollars. Among other items was a significant brief one recommending an appropriation of \$150,000 for torpedo defense of Manila harbor, Philippine Islands, to be available until expended. Other estimates submitted were for a pneumatic dynamite battery at San Francisco harbor \$150,000, and for the installation of range and position finders \$150,000.

—By September three large cargoes of Australian coal, aggregating 6000 tons, will be landed at Dutch Harbor and Unga island, Alaska, for the larger transportation companies. Three vessels are now loading at Newcastle, New South Wales, for the far northern ports. The British ship Ilala, Capt. Davies, will carry 2500 tons of fuel to Dutch Harbor, and the American bark Empire, Capt. Krebs, will have some 1800 tons. The American bark Palmyra, Capt. Kellar, will carry 1400 tons to Unga island for the Alaska Commercial Co. It is seldom that it is necessary to bring Australian coal to the Alaskan peninsula, but the great demand on Washington and British Columbia mines, as well as the reasonable charter rates, has brought it about this year.

—Congress will soon be called upon to decide the question of building a canal connecting the Atlantic and Pacific oceans. Chairman Davis of the Senate Foreign Relations Committee says: "The need for a connection between the Atlantic and Pacific cannot be questioned. Our interests demand it. With a canal between the two oceans we would have nothing to fear from an attack on our Pacific coast. With a liberal appropriation, say \$100,000,000, a canal could be constructed through Nicaragua that would be of value to the United States Government for all time to

come." When the report of the Walker Board upon the feasibility of the Nicaragua canal route comes to Congress, it will be one of the strongest documents in the history of American endeavor to secure the interoceanic waterway. Admiral Walker says that no more striking lesson of the necessity for such means of communication between the oceans could have been given than in the long trip of the Oregon. Admiral Walker will dwell at length upon this phase of the subject, and will point out the advisability of beginning work upon the canal at once.

—Since the days of Dr. Wozencraft innumerable schemes have been projected for the reclamation of portions of that part of extreme southeastern California known as "the Colorado desert." The Lower California Development Co. now proposes irrigation of that region. Estimates are that the entire system can be constructed for \$300,000, and that a canal can be built large enough to carry sufficient water to irrigate 1,000,000 acres of land, it to have a natural fall of 330 feet from the point where the Colorado river is tapped to its extreme northern limit in Riverside county. The lands to be reclaimed are situated in San Diego and Riverside counties, and in the northern corner of Lower California. The center of the tract is about 100 miles from the city of San Diego. The acreage of the first-class lands reclaimable by the proposed system of canals is given at approximately 1,600,000—900,000 being in the United States.

—The acceptance of the American tender for 13,000 tons of steel rails by the Railway Commissioner of the Victorian railways proved a surprise for the local commercial circles there. The tenders were open to all the world, and five were sent in. Two of these were American, two English and one German. One of the American tenders (that of the Carnegie Co.) was declared informal. The other (that of the Pennsylvania Steel Co.) was successful. The amount of the tender was \$75,471, or about \$377,350. This was the lowest. Next came the two English tenders at \$79,214 and \$81,256, respectively, or a difference in favor of the American tender of \$3803, which is a pretty substantial amount. As compared with the former contract let to an English firm of \$5 13s per ton, the American contract works out to only \$4 13s 9d per ton on exactly the same specifications. This is the first time a big railway contract has gone to America from Australia. Commenting upon the result, the Melbourne Age says: "The result of the tender is corroborative of statements lately published in these columns showing that under protection the United States manufacturer has not alone developed a rail trade, and driven the British railmaker completely out of the American market, but has successfully invaded the British market itself under the 'beneficent' policy of free trade, and is, moreover, successfully competing against the British manufacturer in the markets abroad, which the latter held almost exclusively for so many years."

—Since war was formally declared against Spain the United States Government has bought over 12,000 tons of British Columbia coal. The Government has had no trouble in getting this coal, although it is a contraband of war, and England as a neutral nation could not allow it to be taken from her mines. By purchasing the coal from a third party this stumbling block has been surmounted. The coal purchased by the Government is to be disposed of in several ways. The U. S. monitor Monadnock, at Port Angeles, Wash., will use 1500 tons. Vessels conveying coal to Port Orchard, Wash., are also on an 8000-ton contract. The ship Henry Villard is at Comox, B. C., loading 3000 tons for Honolulu, where it will pass into the hands of the Government. The Villard is doubtless the first of a fleet of sailing vessels that will be sent to Honolulu with coal for the Government. The coal is to be put ashore on the island and kept for the use of war vessels and transports on the run to Manila. It will undoubtedly be British Columbia coal that will be purchased. Unless the Government kept a supply on the islands it would often be impossible to get coal. Until the last liner arrived from Australia there was a great shortage at Honolulu. E. E. Caine of Seattle says he has sold the bark Enoch Talbot to the United States Government, with her cargo of 2300 tons of Comox coal. The purchase was made by Commander Green, of the Port Orchard navy yard, for the Government. The Talbot is to be kept at the drydock as a coal ship. It is the intention of the Government to keep 3000 tons of British Columbia coal on hand. The question: "Why does not the Government buy American coal when a quality almost, if not quite, as good can be purchased for less money?" has never been answered. The Blue Canyon Co. of Whatcom, Wash., has coal that stands a navy test as well as Comox, and they have plenty of it for sale.

—E. H. Coffey, secretary of the Club International de San Diego, regarding the undeveloped resources of Mexico on the Pacific side, says: "The most northern and forming boundary with the United States is the State of Sonora, with a population of 154,532; to the south the State of Sinaloa, 223,684 inhabitants. The Territory of Tepic follows with 125,294 people; below, the important State of Jalisco, containing 1,159,341 inhabitants; then Colima with 69,547, Michoacan 834,923, Guerrero 332,857, Oaxaca 793,419, and lastly, Chiapas (not counting the Japanese colony) forming the frontier State of Guatemala. South of our own State lies the territorial peninsula of Lower California with 34,668 people; a total of 4,027,756. The two first mentioned States are essentially devoted to mining industries, though agriculture is well represented. Farther south Colima is purely agricultural, while Jalisco to the north and Michoacan to the south, agricultural and mining industries are evenly divided. But the State of Guerrero, whose shipping port is Acapulco, soon to be connected with the nation's capital, is perhaps least developed, and, I have no hesi-

tancy in saying, is destined to be the richest mining section in the republic of Mexico. In 1872, in company with a practical miner, I traveled throughout the length and breadth of the State, even to the ruins near Ometepe, lately spoken of as a recent discovery by Mr. Nevin. In this State the eastern and western Sierras unite, forming a nucleus; in their extended arms their wealth of gold, silver, copper, quicksilver and lead seems to have been concentrated. The whole country is a mass of mineral to such a degree that there are but few streams which are not impregnated with metallic taste. The fearfully broken and harsh face of the country, be-seamed with rugged hills and deep chasms, has jealously guarded these treasures hitherto. The transportation has of a necessity been costly in the extreme. Within a very short time the 5000 men now working upon the railroad having concluded the task, the country will take rapid strides, and Guerrero will be the Mecca of numberless mining operators. In 1873, at the instance of the Legislature of Michoacan, the federal government resolved to create a port of entry therein—Maruata was the place to be chosen. In a personal interview with President Lerdo de Tejada, he commissioned me to examine the locality and report to him as to the most suitable place. In accordance with his instructions, I went to the coast, at that time virgin to the foot of the drummer and the prospector. A month of solitary wandering along the shores of the ocean from the river Coahuayana to the mouth of the Mexcala, showed me that Bucierias was the only fit place—Bucierias was to the north and Maruata to the south, with a few miles intervening. The names were changed about to suit the circumstances and the spirit of the intention. In June the port was declared open and the custom house established, with a personnel of twenty-four employees. Things progressed merrily until the latter part of September, when fearful inundations flooded the surrounding country, cutting us off from all communications by land. The poisonous emanations from the marshes and forests began their deadly work. The engineer, a Frenchman, was the first to succumb. In ten days eighteen had died; the collector, his secretary and the appraiser fled, and three, among whom I was one, were left to our fate. After an illness and a convalescence which lasted ten months, I sent in reports, according to my promise, of the products of the country. A collection of eighty-eight different varieties of wood, now in the museum of the University of California, which I forwarded in 1873, will in itself give an idea of the forest wealth of that section. Rubber and vanilla, tiger skins and deer skins form a revenue that easily support the Indian from year to year. The coffee, which was taken up as an industry in those times, has to-day developed to such a degree that, as you must be aware, companies are eagerly buying up land in all parts. One single estate, which at that time was known by the names of Montetlan, El Jabali and Sal si pueades, in the State of Colima, was entrusted to me to be sold for \$15,000. It now belongs to a wealthy merchant and banker, who has set it out in coffee, and from 100,000 trees he took a crop of 183,000 pounds. There are now about 700,000 trees in. Mr. Vogel was offered \$2,000,000, which was not considered."

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR WEEK ENDING MAY 24, 1898.

- 604,694.—SPEAKING TUBE—T. Fales, Bridgeport, Cal.
604,380.—WAGON BRAKE—D. A. Foster, Santa Rosa, Cal.
604,526.—PIPE WRENCH—T. J. Fowler, Topaz, Cal.
604,691.—DUMP WAGON—T. B. Hopper, Yountville, Cal.
604,394.—CAN BODY BLANK—H. C. Hunter, Alameda, Cal.
604,491.—THRILL COUPLING—T. E. Kendall, Walla Walla, Wash.
604,505.—CAR COUPLING—C. H. Smith, Coulterville, Cal.
604,483.—STATION INDICATOR—W. A. Turner, S. F.
28,693.—DESIGN CLOTHES PIN—F. C. Hazen, Los Angeles, Cal.
28,697.—DESIGN TELEPHONE SWITCHBOARD—W. F. Smith, S. F.

NOTE.—Plain and Certified Copies of U. S. and Foreign patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC Press U. S. and Foreign Patent Agency, the following are worthy of special mention:

CAR COUPLING.—Charles H. Smith, Coulterville, Cal. No. 604,505. Dated May 24, 1898. This invention relates to a device for the automatic coupling of cars and a means of disengaging the couplings without the necessity of the operator passing between the cars. It consists essentially of bars rigid with and projecting from opposing cars, said bars being on opposite sides of the longitudinal lines of the cars, diverging guides projecting from the cars, one in line with each of the bars, said guides having openings made entirely through them and the bars having knobs which pass through the openings to a point exterior to the inner end of the guides. Shafts are journaled on each car at a point behind the inner end of each guide and weighted arms on the ends of the shafts with plates on the shafts lying just behind the vertical plane of the inner ends of the guides to prevent the passage of the knobs beyond the inner ends of the guides, except by lifting the plates until the grooved portion passes the knob, when the plates will seat themselves against the open inner ends of the guides and partially close the same and secure the knobs.

MICA AXLE GREASE lightens the load—shortens the road.

Makes the wagon pull easier, helps the team. Saves wear and expense. Sold everywhere.

ZENOLEUM Sheep Dip

that will effectually destroy Ticks, Lice, and other parasite pests, and which will cure Scab, Paper Skin, Gangrene, Grub, etc., without discoloring or injuring the fleece and without injury to animal or operator, deserves the attention and patronage of the shepherd.

ZENOLEUM IS THE ONLY DIP which possesses these qualities and the further advantage of being cheap. One gal. of ZENOLEUM makes 100 gallons of the best dip known to man. Use it either hot or cold. Agent wanted in your locality, write or our special terms & circulars. Zenner-Raymond Disinfect' Co. 58 Atwater St. Detroit, Mich.

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The Weekly American Bee Journal Tells all about it. Sample Copy Mailed Free **G. W. YORK & CO. 118 Michigan St., CHICAGO, ILL.**

Acclimatization in the Tropics.

The question of the white man's ability to conquer the tropics and to make for himself a permanent home in those regions is one that has mostly possessed a secondary interest for physicians in this country, but the war and projects of annexation make it probable that this will soon be changed. Porto Rico, the Sandwich Islands, and the Philippines are all tropical islands, and if they, one or all, come under our flag, doubtless many of our citizens will go thither to seek their fortunes, and the question of acclimatization becomes a practical one.

A timely discussion on this topic recently took place in London before the Royal Geographical Society, in the presence of many of the best-known authorities on tropical pathology. Most of those taking part in the debate held that there is no reason whatever why the white man should not be able to adapt himself to the new conditions of life in the tropics and protect himself against the diseases that prevail in those regions. The popular belief that the white man cannot successfully colonize the tropics is disproved by the fact that he has done so. It is undoubtedly true that many northerners who go to equatorial regions contract disease there and die, but in the majority of such cases the man is the victim of his obstinate unwillingness to change his habits in respect to eating, drinking and clothing, and to conform his new mode of life to new conditions.

The chief diseases, both acute and chronic, of tropical countries—those which formerly caused such ravages among the white settlers and gave rise to the prevalent theory that whites could only live in the temperate zone—are all microbic in origin and consequently preventable in great measure. We cannot, of course, expect to see them absolutely wiped out of existence, but their sting, like that of smallpox, can be extracted by means of an improved public and private hygiene. A comparison of the healthfulness of the West India islands under enlightened British rule with that of the two until recently under Spanish misrule shows what can be done by sanitation to convert a pest hole into a paradise.

Sanitation has within the last few decades wrought wonderful changes in all tropical countries, as regards health conditions, and the changes have been so great in some places that regions which were once considered most deadly are now even recommended as health resorts.

Heat and moisture are not in themselves the direct cause of any important tropical disease. The direct causes of 99 per cent of these diseases are germs. When these germs and their habits are known fully, victory will be within man's grasp. Most micro-parasites, when they are once within the body, are fairly safe. But these same parasites, in order that their respective species may keep in existence by spreading from one host to another, must at some time or another leave the human body, and during this necessary extra-corporeal state they are eminently vulnerable. To kill them then is simply a matter of knowledge and the application of this knowledge, that is to say, sanitary science and sanitation.

One earnest contention of those who argue against the possibility of successful colonization of the tropics by the white races is that, even if the original colonist lives out his natural term of years, his children will bear in themselves evidences of the degenerative influences of a hot climate. It is true that in many parts of the tropics the climate does cause a deterioration

of white races. As an example of this is cited the offspring of British parents in India, who, if brought up in that country, do not reach the standard of stamina seen in the home-bred Briton. This is no doubt true of other places than India, and also of other than tropical regions, but it is not true of all tropical countries. It is a question whether it is the heat alone that works this change, or whether there are certain as yet unappreciated telluric influences which are responsible for the loss in stamina. In India, Ceylon, tropical America, and Australia, the problem of colonization may be regarded as solved. In other regions certain definite diseases still stand in the way, namely, malaria, dysentery and yellow fever in the West Indies, and black-water fever in Central Africa. The real question of colonization of the tropics lies in the finding of means of protection against the diseases named. That this means will some day, if not very speedily, be found can hardly be doubted.

Largest Pure Gold Nugget.

The largest nugget of pure gold ever found in America was picked up in California. This claim is made boldly and in the face of an article carelessly copied into the San Francisco *Chronicle* from a Philadelphia paper. The Quaker City publication cites a nugget taken from a mine near Helena, Montana, by the Conrad brothers, valued at \$985, and says: "No larger has ever been taken from a mine in America, according to the best records on the subject. It was said that one was taken out of Nelson gulch once that was valued at \$2300, but if it ever existed it found its way into the melting pot so rapidly that no one to-day is able to swear positively that he ever saw it. Another story tells of a \$1700 nugget, but this one, too, is not to be found. The big nugget in the Conrad collection came from the Snowshoe diggings, having originally been bought from a miner named Price."

Now it so happens that Dr. Benjamin Shurtleff has in his possession the photograph of a nugget of gold found at Spring Creek, Shasta county, six miles from the old town of Shasta, June 25, 1870. It weighed 184½ ounces and had a value of \$3300. Dr. and Mrs. Shurtleff, then residents of Shasta, handled the nugget and remember that it was almost entirely free from quartz or foreign substance. Their son George had it photographed and took the picture to San Francisco for exhibition. A watch and chain was photographed with the nugget by way of setting forth more clearly its size.

It is barely possible, now that a discussion of gold nuggets is to the fore, that other counties of California will come forward with specimens heretofore unmatched by Montana or any other mining region on earth, but the nugget from Shasta will doubtless continue to hold first place for size, weight and purity of quality.—Napa Register.

Lady enters barber shop with a Skye terrier:

"Mr. Barber, can you cut my doggie's hair?"

"No, I can't; or, rather, I won't."

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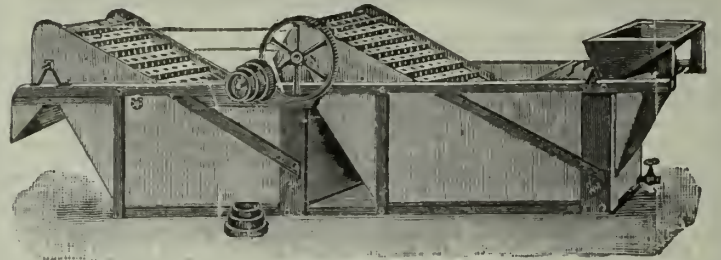
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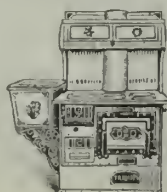
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Stockton Grange and the Nicaragua Canal.

At the meeting of Stockton Grange, No. 70, P. of H., held on June 4th, the following preamble and resolution were adopted:

WHEREAS, The Nicaragua Canal in operation now would be worth many millions of dollars to our Government—enough almost to have built it. We could pass our fleet of war vessels from ocean to ocean in a moment of necessity and protect our two coasts from a foreign enemy so quickly that any power would hesitate to attack us;

Whereas, In our war with Spain our fleets would have the advantage of distance to all points of action. With our fleet at New York it would be nearer Manila than Spain's at Cadiz, or with our fleet at San Francisco it would be nearer Cuba than Spain;

Whereas, In the battleship Oregon case, she might have been with our fleet in the Atlantic weeks ago instead of having only just arrived, and so have avoided the anxiety and lots of time;

Whereas, The saving of 9000 miles in distance and the strategic value would, we believe, in these times well be worth all the canal might cost, even if the amount were \$100,000,000;

Whereas, our Government should create a naval station at Lake Nicaragua equal to any in the world, from which our warships could pass to either ocean with a rapidity that would forever stay a foreign foe and give our country a protection that would forever insure peace with all nations of the earth;

Whereas, From a commercial point of view, it would mean that our flag and our shipping would enter every port of the world, and we would be maritime power of all time; therefore he it

Resolved, By Stockton Grange, No. 70, P. of H., that our representatives in Congress be asked and urged to press the matter to final action.

U. T. Root, Sec'y.

San Jose Grange.

There was a very large attendance at the meeting of San Jose Grange, at Hale's Hall, June 4. Worthy Master Hurlburt presided, Miss Luella Wadhams, Secretary. Mrs. Effie Emerson of Alviso was initiated in the third and fourth degrees. Worthy Master Thos. Jacobs of Tulare Grange was present. In a brief talk he highly complimented the San Jose organization upon its prosperity and the splendid success that has attended its efforts for the promotion of agriculture in this section.

After the business meeting, the Grange enjoyed a delicious harvest feast. One hundred and twenty persons sat down to the first table and a large number at the second.

William W. Reed, a charter member of Saratoga Grange, has presented San Jose Grange with a beautiful gavel that was used by the Saratoga organization twenty-eight years ago.

Petaluma Grange.

The following patriotic resolution was passed by Petaluma Grange in regular session Saturday afternoon, June 4th:

Resolved, That the Petaluma Grange, wishing to express its loyalty and patriotism, does extend to all members who enlist in the United States service an exemption from all dues of this Order for themselves and wives while in active service, and we pledge ourselves to aid the families of our enlisted members.

M. D. HOPKINS, } Committee.
W. W. CHAPMAN, }

The Grange also subscribed \$5 to the Red Cross Society of California.

Precautions Against Malaria.

W. T. Hornaday gives the following advice to soldiers about to go to Cuba: "After living in the most malarious jungles on earth, in the midst of swamps, drinking swamp water, and often having to eat unaccustomed and badly cooked food, I never had but one touch of jungle fever, and that only laid me up for six or seven days. I owe my excellent health to two or three precautions. I never slept on the bare ground or in the rain, and always under shelter. I always wore light flannels next to the skin, and never slept in damp clothes. Whatever else I might have to do without, two changes of flannel underwear besides that I had on were always at hand. Take from five to six grains of quinine every morning in a cup of hot coffee, if you have it; if

not, then in hot water. Have your shoes to fit you, even if you must buy them yourself, though the United States is furnishing its troops with an excellent marching shoe. With these precautions and a dose of some light laxative once a week, there need be no more fear of fever in Cuba than there is in Missouri."

H. K. PRATT, citrus fruit broker, has taken into partnership his two sons, making the firm H. K. Pratt & Sons, with headquarters at Los Angeles after June 20th.

Commercial Paragraphs.

UNDER the management of George H. Ismon and A. J. Robinson the American Steel and Wire Co. of Chicago, Ill., has established a Pacific coast agency at No. 308 Market street, this city. This company is successor to the Consolidated Steel and Wire Co., Chicago, Ill.; I. L. Ellwood Manufacturing Co., De Kalb, Ill.; American Wire Nail Co., Anderson, Ind.; American Wire Co., Cleveland, O.; Salem Wire Nail Co., Salem, O., and the H. P. Nail Co., Cleveland, O. The coast agency is prepared to quote lowest prices on products of the several mills, such as wire nails of every kind, barbed and woven wire fencing, ribbon and cable wires, poultry netting, galvanized strand and clothes lines, hale ties, light chain of all kinds, etc. Buyers of wire goods will do well to note the above facts and remember the agency's number.

Breeders' Directory.

Six lines or less in this directory at 50c per line per month.

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J. B. HOYT, Bird's Landing, Cal. Importer and Breeder of Shropshire Sheep; also breeds Cross-bred Merino and Shropshire Sheep. Rams for sale. Prices to suit the times. Correspondence solicited.

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Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced first-class agency. We have able and trustworthy associates and agents in Washington and the capital cities of the principal nations of the world. In connection with our scientific and Patent Law Library, and record of original cases in our office, we have other advantages far beyond those which can be offered home inventors by other agencies. The information accumulated through long and careful practice before the Office, and the frequent examination of patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us to give advice which will save inventors the expense of applying for patents upon inventions which are not new. Circulars and advice sent free on receipt of postage. Address DEWEY, STRONG & CO., Patent Agents, 330 Market St., San Francisco, Cal.

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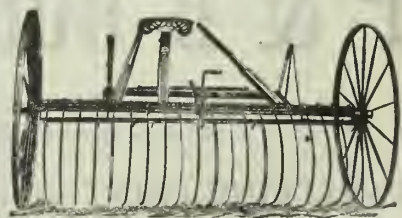
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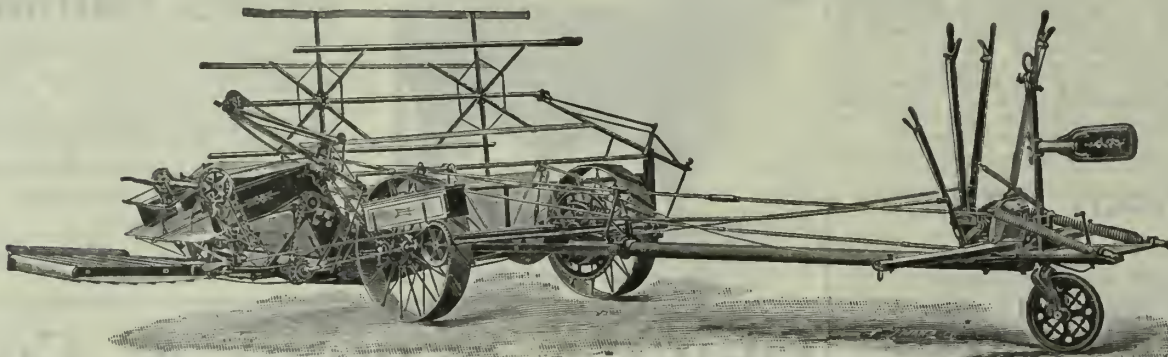
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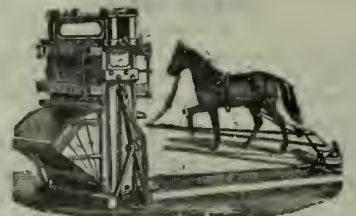


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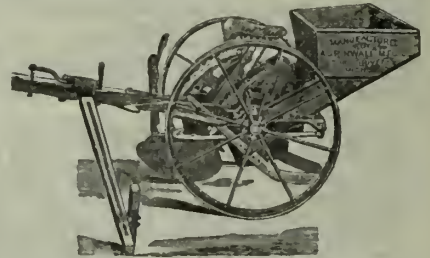
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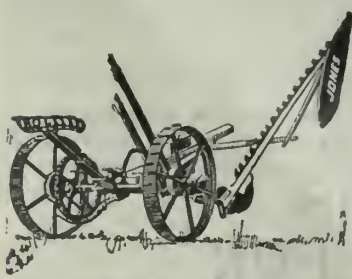
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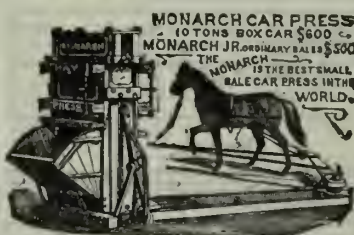


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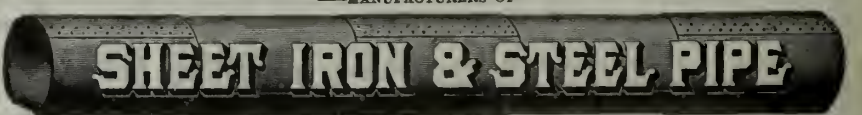
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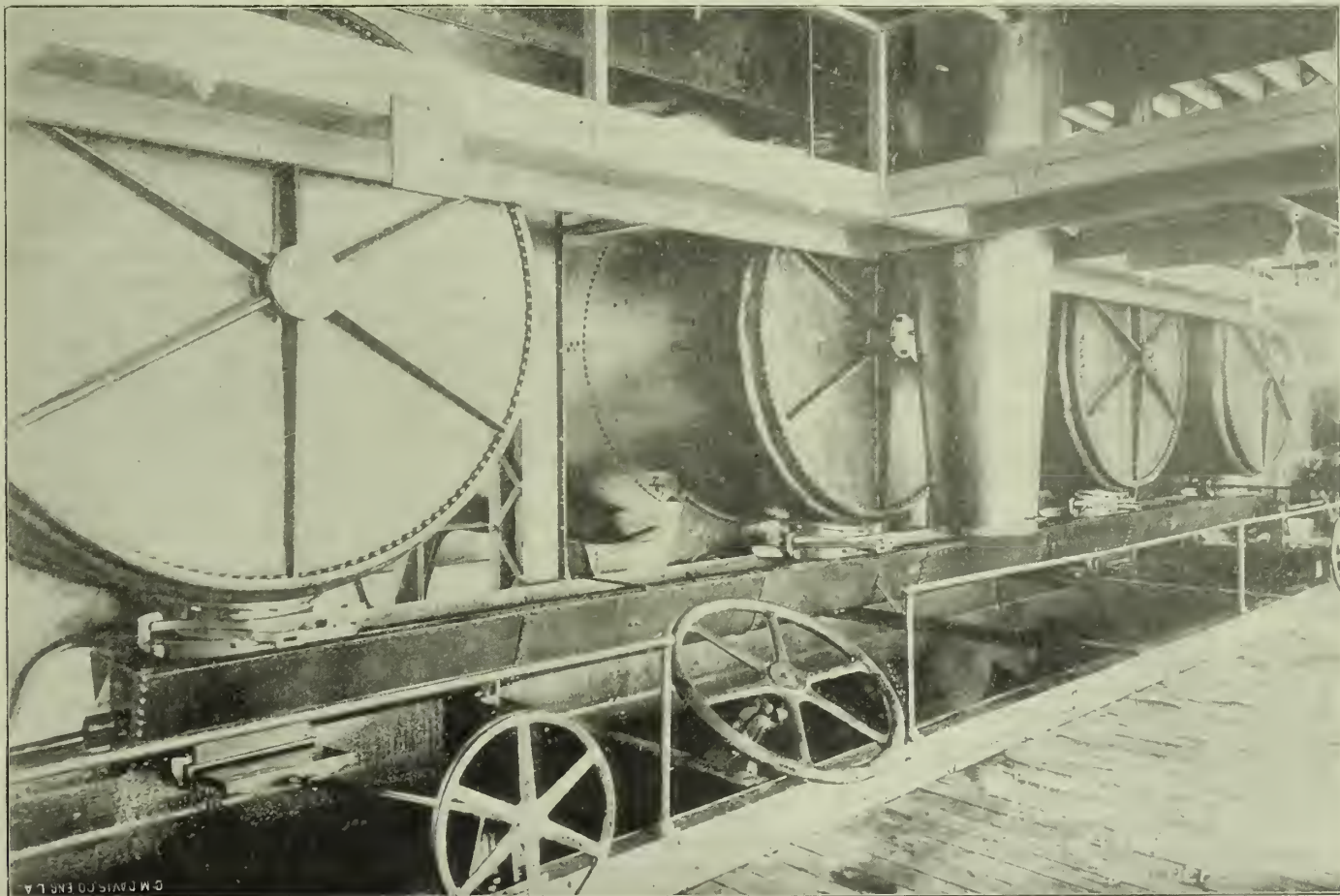
Vol. LV. No. 25.

SAN FRANCISCO, SATURDAY, JUNE 18, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

Crystallizing and Drying.

At our last visit to the sugar factory we were occupied with vacuum pans and centrifugals, and we must still linger a little longer amongst the ponderous machinery. Although the chief part of the crystallizing is done in the strike pan, as already described, and these crystals are freed from the syrup in the centrifugals, there is still some crystallizable sugar remaining in the syrup which is desired to secure. The syrup is taken again to the vacuum pan and condensed further, and then it is taken to the crystallizers, which are the large revolving tanks shown in the upper engraving on this page. In these crystallizers the syrup is subject to such movement and heat which minister best to crystallization. In fact, by four or five days of such treatment as much sugar is obtained as by the old method, which was to allow the syrup to stand in large tanks for as many months. Even after this crystallizer treatment, there is some sugar remain-

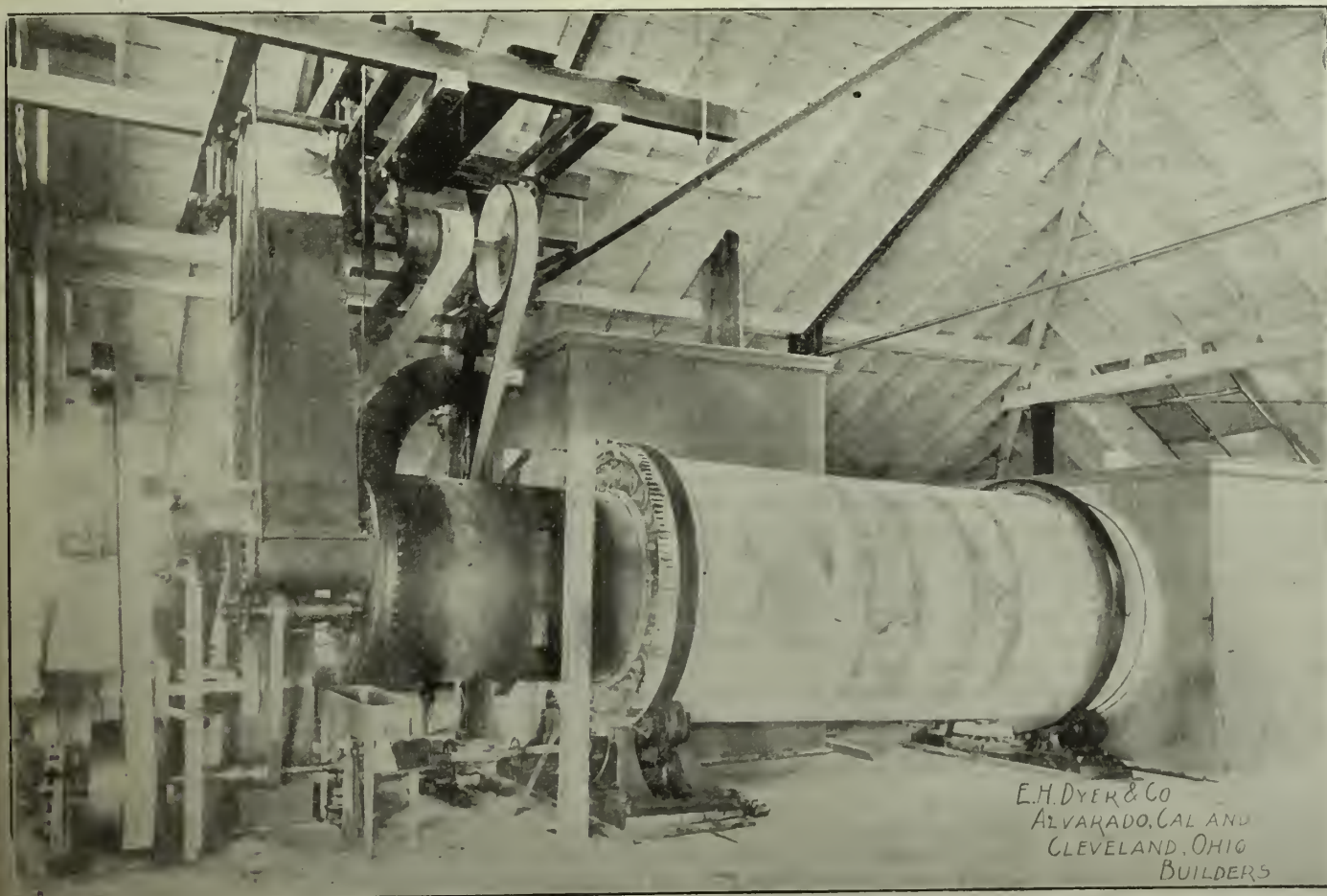


THE CRYSTALLIZERS IN WHICH SUGAR CRYSTALS ARE FORMED BY A SLOW MOVEMENT OF MOLASSES FOR A SHORT PERIOD.

ing in the syrup, but it can only be secured by elaborate and expensive processes. Their profit depends upon the price of sugar. When the sugar

is washed clean and white in the centrifugals it is too moist to be packed for shipment, and this is done by the drier and granulator shown in the lower en-

graving on this page. It is a hollow iron cylinder 6 feet in diameter by 30 feet long, which revolves slowly; this motion causes the sugar to be continually dropped on warmed pipes, which, with a current of hot air that is forced through it, completely removes every vestige of moisture from the sugar; the sugar passing from the drier goes over a screen which removes any lumps that may have formed, and falls into a hopper, from which it is sacked or barreled and is ready for the market. This closing operation will be seen on our next visit to the factory.



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ALVARADO, CAL AND
CLEVELAND, OHIO
BUILDERS

DRIER AND GRANULATOR WHERE THE DAMP SUGAR FROM THE CENTRIFUGALS IS DRIED BY PASSING THROUGH HOT AIR AND OVER A SCREEN.

The largest display of sweet peas ever made in California was seen at the meeting of the State Floral Society in this city last week. Over eighty varieties were shown in generous-sized bunches, including the latest novelties, some of them first shown to the public on this occasion. The display was by the leading California growers of sweet pea seed, C. C. Morse & Co. of Santa Clara, and the interesting address which Mr. Lester L. Morse made at the meeting is given in full on another page of this week's Rural.

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E. J. WICKSON..... Horticultural Editor.

San Francisco, June 18, 1898.

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Tanks—R. F. Wilson, Stockton, Cal., 399.

The Week.

As we go to press (on Wednesday afternoon) the city is loud in its enthusiastic god-speed to the second division of the Manila expedition, which is passing out through the Golden Gate in four large steamers, with an aggregate of over 4000 men at arms, to gather the fruits of the great naval victory of Admiral Dewey. Nearly 8000 men are now in Manila or on the way, and in ten days the third and final installment will set sail from this port. San Francisco naturally takes the keenest interest in the aspect of the war which pertains to the Pacific, and the expression of it, with vocal cheers and cannons' shots and whistles' screams and bells' peals, all of which are at this moment in their greatest volume, must be audible for many miles across the smooth waters of San Francisco bay. The streets leading to the wharves are filled with a throng rushing to contest with throngs already in place the last foot of standing room whence can be seen the flag-draped steamers, crowded to the rails with eager men pressing forward to return the salute from the multitudes upon the shores. The scenes are stirring. Evidently the issue is one which fires the American heart and awakens the profoundest enthusiasm.

And the heartfelt farewell which California bids the heroes westward bound is but an echo of the anthem which inspires the greater expedition which departed yesterday, southward from Florida. Evidently the war is well under way. May it be prosecuted wisely and with utmost energy, to the end that victory may not only be sweeping but speedy. If America is to do something for civilization and humanity by this stroke, the blow will have the greater moral effect if it fall quickly and irresistibly. Let the world see now that the United States not only stands for principle, but stands well for it. A few days' achievement now may save the world half a century's delay.

Aside from war topics, the greatest sensation is the collapse of another great wheat corner which has influenced values the world around and caused much hardship and uncertainty. The collapse has temporarily unsettled values somewhat even here, but it is at a time of the year and in a kind of a year when least effect could come to California. In San Francisco all cereals are laggard this week—hay and millstuffs quiet; beef and mutton steady, with good hogs almost disposed to put on wings. Wool is looking better. Strictly choice dairy goods are firm, but there is too much of inferior grades; and fancy ranch eggs are higher, while common eggs are rejected in the face of Eastern eggs of better points.

The Situation in Pork.

A very significant situation was hinted at in last week's RURAL in the remark that the price of good, finished pork was at such a figure that dealers were calculating that there would be money in bringing in Western pork in refrigerator cars. Just how accurate the calculation may be we cannot say, but we believe the local price for the best hogs is passing beyond the equivalent of the price of pork in Mississippi valley slaughtering points. This fact is a forcible reminder that California has never occupied her true place as a producer of pork products, and suggests considerations which strike us as timely and pertinent.

The first point is too trite to warrant extended comment. With a climate which gives the hog an open air life the whole year, with only shelter enough required to ensure the animal a dry bed in the rainy season, there comes the advantage of quick growth and profitable early maturity, and a percentage of health in the herd which is higher than can be secured in hog pen climates even with the utmost regard for the latest discoveries in prevention and cure of swine diseases. Besides this, the climate gives the finest hog pasture in the world in the form of alfalfa, and favors the heaviest growth of pork-making cereals which are not inferior to Indian corn even where the growth of that grain is not satisfactory. An yet, with those facts in our favor, we keep on bringing in Western pork products in immense quantities, instead of building up local packing concerns and contending for the supply of great consuming markets of the coast in city, camp and mill. Our packing is extending, it is true, and it will one day be great, but if the present generation desires to enjoy it to any extent it should take hold of pork packing and curing more resolutely, and promote it with some liberality and energy. We have had some activity in booming packing establishments as adjuncts to real estate speculation. We need some activity in packing industries for their own sakes, and for the market they would afford for the immense hog crop which this State could easily produce.

It is largely through lack of local packing on a large scale that we have had such wide fluctuations in pork values. Once in a while, men have grown large droves of hogs and have been surprised at the amount of money thus secured; but in most cases, the opposite has been the course of experience, and the cry has gone forth that there is nothing in hogs. As stated, this is partly due to the fact that the fresh pork demand is easily oversupplied and the packing not largely developed, but there is another factor in the problem and that is the inferiority of too great a proportion of the hogs which are grown. There is too wide an impression that a hog is merely an animal with bristles on his back and a curl in his tail. Men who will talk themselves hoarse about the advantage of breed and ancestry in their horses or dogs will complacently waste feed on scrub cows or razor-back hogs and conclude there is nothing in dairying or "razin' hawgs." They are usually right that there is no money in their style of hog raising. Nothing but a scarcity will bring the breedless hog up to the paying point, and the slightest increase in supply will throw him below it. He costs too much, in the first place, and he is not worth his cost for packing, for no amount of skill in curing can make first-class ham or bacon out of an animal which is built and equipped for a coursing match.

It happens, then, that the lack of breeding, with its attendant qualities of early maturity, tenderness and flavor, keeps the California hog market in a constant oscillation between profit and loss and diminishes chances of a steady and growing demand such as could be commanded by a hog product of a higher grade. East of the Rocky mountains there has been most remarkable change in the character of the swine during the last quarter of a century, and upon the present high standard of form and qualities is based the immense export trade in pork products, the promotion of which gives our ministers to European countries more opportunity for diplomacy and our Congressmen more display for statesmanship than any other public matter which engages their attention. The fact that the Dons call the Yankees "pigs" has a deep industrial significance, and it all rests upon the achievements of Americans in producing a vast amount of hogs with blood in them. If

the Mississippi valley had been content to grow scrub hogs, the American pork products would never have actuated commercial treaties with European nations.

Why cannot California take a hint from the most obvious signs of the times? Not only can we supply our own local needs, but the mastering of the knowledge and facilities to do that will also constitute California a packing State ready to demand her share of the export trade. As the course of empire is still westward, and the development of the east coast of Asia is to enlist the activity of all civilized nations including our own, there will arise new markets and increased demand in old ones and meat products are a staple in the advance of commerce and civilization. It will be a shame to this coast if we allow our grandfathers of the Mississippi valley to control this trade. Let us amass the capital, command the experience and exhibit the energy needed to possess ourselves of this opportunity. But first of all, let all begin at once to prepare to command present profits and future prospects, and that can be done only by a wider appreciation of a good hog and enterprising determination to grow none other.

THE CITRON.—It is interesting to learn through a letter from Mr. G. B. Brackett, United States Pomologist, that the division of pomology of the United States Department of Agriculture is now endeavoring to collect all data possible bearing upon the citron and process of preserving, with a view to publishing a circular which will answer all the questions they are receiving from time to time. There has been considerable data in the Washington office available, but there are some details yet to be obtained concerning the process of preserving the fruit. It may take some considerable time yet before all the information desired will be obtained. It will be remembered that the Division imported a variety known as the Corsican citron in 1894 at considerable expense. Cuttings and rooted plants were sent out to a great many persons in Florida and California, and the trees are now beginning to bear fruit from the plantings they made. Mr. Brackett has a long list of the parties that he can furnish to any one who desires to obtain buds of this variety. This list of names will be included in the circular when published. We are sure that this undertaking will be welcomed by our citrus growers, for there are many who do not know just how to proceed with the citron.

JUDGE TORRANCE has decided that the petition for organization of the alleged Fallbrook irrigation district was not signed by sixty, or a majority of the holders of title to lands within the district, and that no notice of the presentation of the petition to the supervisors was ever published in accordance with the law. In view of the facts the court decided that the district was never duly organized and the proceedings for the organization of the alleged district were null and void.

THE California Raisin Growers' Association is still at work endeavoring to secure 75 per cent of the coming raisin crop for the pool. The Fresno papers say the requisite amount has not been signed yet, but the mark is being gradually approached. There is reported much apathy in some of the districts. While in many the responses have been general, amounting to 75 and in some instances over 90 per cent of the crop, in others barely any have joined the pool.

It is interesting to learn from *Vick's Magazine* that the California violet, which was introduced as a novelty from this State a few years ago, is proving quite hardy in New York and enjoys the snow as well as our other native sons and daughters do—when they first see it. The New Yorkers say it almost seems to grow under the snow and this betrays its origin, for it would hardly be Californian if it did not get big under all circumstances.

THE Canadian Government has decided not to grant, this year, the bounty asked for by the proposed Beet Sugar Company of Ontario, Canada. The bonus requested was \$1 the first year, 75c. the second, 50c. the third year and 25c. the fourth and fifth years, per 100 pounds refined sugar produced from beets grown in Canada.

QUERIES AND REPLIES.

Peppermint Oil Production.

TO THE EDITOR:—Could you tell me if the peppermint culture has been tried in California and, if so, where, and what success did they have? I am anxious to find out all I can about peppermint, as I am thinking of planting about ten acres next year. Do you know what kind of land is best adapted to the growth of peppermint and where could I get the seed or plants?—P. N. WEST, Kings River.

Peppermint growing has been tried on a small scale in California and abandoned because the oil could not be produced so cheaply as in the older States where they have had greater experience. Another reason for the failure was the fact that Eastern brands are well known. The trade is accustomed to handle the oil by the brand, and a new article has to make a name for itself. All such obstacles could be overcome by due effort and patience were it not for the most discouraging fact of all and that is, the consumption of peppermint oil is limited and the old Eastern regions cannot only fill the demand but they have produced an oversupply to such an extent that the price is only about 25 per cent of that of twenty-five years ago, and the fields are now being plowed up as altogether unprofitable. Peppermint oil usually rises in price in war time. The product during the civil war was exceedingly profitable in the single county in New York, where almost the whole supply was grown for the world's trade. Even if the present war should raise the price, the old Eastern fields would speedily flood the market. It is to be regretted that the outlook for the oil is not better. California could produce it in almost unlimited quantities. It is usually grown on a moist, rich, loamy soil and is no more difficult to grow than alfalfa and it is harvested in about the same way. After mowing and raking it is taken to the "still," which consists of a steam boiler and a couple of steam-tight wooden vats suitably connected by valves so that one can be steamed while the other is being emptied and refilled. A tin worm in a tank of water serves to condense the steam and the oil gathers on the top of the water as it runs out of the end of the worm into a receptacle. It is only necessary that the roots of the true mint should be obtained to start with, for all sorts of mint will not do. But there is, as already intimated, little use to talk about peppermint oil. There is nothing in it. The last experiment on this coast was in the State of Washington and that was a failure like the rest. The last we heard of it was that the roots would be given away to any one who wished to produce his own colic and toothache remedy.

Chestnuts and Pecans in Southern California.

TO THE EDITOR:—Do they grow chestnuts here? What kind of soil is best for them? Can they be grown without irrigation here in Eagle Rock valley? It is clay and sand mixed. How do Japanese chestnuts grow here? They seemed very promising in Florida. Can pecans be grown in California? I would think adobe land would suit them, if irrigated, providing there was no alkali.—J. P. SMITH, Station A, Los Angeles.

Chestnuts have not been sufficiently grown in southern California to fully demonstrate their success. There are thrifty young trees of the Japanese and Spanish varieties growing at many places, and, as might be expected, they are doing best on the moister, heavier soils of the valley low lands. They seem also to enjoy the cooling influences of the ocean and the moist ocean breezes. In such places they will do well without irrigation. Such soil as you mention is probably as favorable as could be found, but good summer cultivation should be given to retain moisture. The bearing of the chestnut is more uncertain, however, than the growth of the tree. It is apt to be deferred for a good many years, and, if one desires returns at a certain date, he should plant something else whose behavior is more definitely known. The pecan also grows thriftily and likes a moist soil, but its bearing satisfactorily is more uncertain than that of the chestnut. The pecan does not seem to know quite what to do with its nuts in the delightful California autumn weather. The cooler, moister air of the autumn near the coast seems to induce the tree to hold onto its nuts, instead of letting them drop in southern California fashion, and they sometimes sprout on the tree, instead of maturing properly. How much the tree could be helped by allowing the soil to dry out to-

wards the end of the summer is not demonstrated, so far as we know, but it is a fact that there are trees bearing satisfactorily in the Sacramento valley, where the extremes of moisture and temperature are greater than on the coast, and the same thing might occur in the interior at the south. We consider the pecan, however, as still clearly an experimental affair in California, with the chances against it as a profitable investment. If any reader has reason to think differently, we would like very much to know it.

Drouth and Fruit Trees.

TO THE EDITOR:—My cherry trees have ripened with nothing much but skin around the pit and the leaves are drying up. Is it the dry year? What will become of them?—READER, Yolo county.

TO THE EDITOR:—What is the matter with my bearing apple trees? They looked splendid until a few days ago and now leaves and fruit are dropping. They were sprayed with Paris green one pound to 200 gallons of water. They are on a north slope quite steep and high up and the ground was not plowed until late this spring.—GROWER, Watsonville.

We expected such complaints this year for the reasons given in these columns early in May, but we hardly expected to hear of such acute effects so soon. Within another month we anticipate much of this behavior from neglected trees or trees in particularly dry soils. The case of the cherries seems to be clearly the result of an exceedingly dry subsoil. Such trees may die or they may be able to retain moisture enough to live through a long, dormant period. If they do, there is danger that they will start out into leaf and bloom as soon as the fall rains moisten the soil, and this will destroy next year's fruiting. We expect all kinds of irregularities this fall and we cannot say what the ultimate effects will be on the trees. Probably there will be many kinds and degrees in the effects.

The case of the apples has some symptoms of drouth and some which would indicate that some miscue in the spraying was involved. The first thing to do is to dig down into the subsoil and see if it is dry. If so, there is no use looking further for a solution. Into an unplowed slope probably very little of this year's scant and distributed rainfall would deeply penetrate. It is more likely that nearly all of it was lost by evaporation soon after it fell, leaving the under stratum where the roots of the bearing trees rest nearly as dry as it was before the rains began. We can think of nothing to advise in the way of treatment except to cut back to reduce the evaporating surface, as the trees are probably too high to think of watering them.

If the soil is found by digging not to be dry enough to account for the trouble, it may be due to the spray. If so, it is more than usually dangerous this year, for the lack of moisture will handicap the refoliating. Cutting back is the only help we can suggest if no water can be given.

Vine Mildew.

TO THE EDITOR:—I send you some vine leaves, and should like to know what affects them and what is the remedy. I thought it might be the red spider, but did not think it began while the vines were so young.—M. C. WINCHESTER, Vallejo.

The trouble with your vines is mildew, which is apt to attack the new growth almost at its starting, and for this reason it is the practice to apply sulphur to the vine stump very early, and to repeat the application of sulphur to the foliage several times afterwards. If the mildew gets the start it is hard to arrest it, but by getting the remedy ahead of the disease it is possible to have good growth and fruiting even in places where the fungus is very active. Mildew is most abundant in the coast regions and least injurious in the interior plains.

Red Spider on the Hop.

TO THE EDITOR:—Is the red spider you treat of in the RURAL PRESS the same insect that attacks the hop in the valleys of the State in dry years?—D. P. DURST, Wheatland.

Yes, practically the same, though what ultimate refinement of classification the entomologist will indulge in when he comes to work up these mites minutely one cannot say. It is the same insect which is especially grievous to the almond and prune in interior situations, and it has quite a taste for peanuts and rather likes grapevines, etc. It is always worse in heat and drouth. The remedy is water or dry sulphur applied to the tree or vine in a fine cloud with a bellows or otherwise—just as they use it on almond trees in your region.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 13, 1898.

By W. H. HAMMON, Station Director.

The second week in June was marked by scant rainfall and temperature about normal. Light showers fell along the coast on the 9th and 10th. In the northern portion of the Sacramento valley there were thunder showers on the 12th, with a rainfall of a tenth of an inch. Cloudy weather has prevailed along the entire coast, with frequent heavy fogs. On the whole, the weather has been favorable for vegetation. Haying is nearly over and more hay of good quality is reported than was expected a month ago. Grain also will yield better than anticipated. Considerable wheat will be harvested within the coming fortnight. Fruit of all kinds is doing well. Apples promise a very large crop. Pears and prunes are developing nicely; beets, potatoes and onions flourishing; oranges will make a heavy crop. Alfalfa hay grown on irrigated lands is of great help to stock. In Orange county it is reported that much of the short barley hay has been saved by attaching a table to mowing machines, catching the short hay and saving it in winnows, clear of dirt.

SHASTA.—Haying about over. Harvesting will begin in a few days. Heavy yield of wheat expected. Prunes and pears fine.

TEHAMA.—Week very favorable for crops. Apricots and peaches plentiful. Harvesting barley and oats.

BUTTE.—Light southwest winds. River falling to low water mark. Peaches and vegetables plentiful. Orchardists irrigating.

GLENN.—Harvesting barley about over; yield light, but better than expected several weeks ago. Will soon begin harvesting wheat.

YUBA.—Prospects good for grain and fruit.

YOLO.—Haying about over; crop light. Barley harvesting now on; crop light but better than expected. Apricots and peaches coming on; crop light and fruit small. Pears look well and crop is large.

PLACER.—Fruit promises well. Grapes setting nicely and a large crop is expected.

SACRAMENTO.—Fine weather for irrigating; harvesting commenced; crops looking well. Late fruit and vegetables thriving.

SOLANO.—Misty, cold and windy with little sunshine. Barley harvesting progressing rapidly, averaging six sacks per acre. Wheat harvesting will begin this week; summer-fallow expected to make twelve sacks per acre; winter sown a failure. Prunes, peaches and grapes doing well.

SAN JOAQUIN.—Warm weather ripening grain very rapidly and wheat will yield from 400 to 800 pounds per acre. Considerable grain will be cut within the next two weeks. Shipments of onions heavy; fine prospects for large grape crop.

STANISLAUS.—Harvesting commenced and good yield is expected from summer-fallow grain. Fruit good; small peaches coming. Outlook good for second crop of hay and grain hay. Grapes doing well.

MERCED.—Haying nearly completed; light crop, not enough for home use. Wheat is ripe and ready to cut, good quality but scattering. Grapes promise a heavy yield.

FRESNO.—Warm days with cool nights very favorable for all crops. Haying completed and yield greater than expected. There will be enough wheat for seed and to spare. Good yield of barley. Fruit trees and grape vines look well; peaches and apricots coming on.

KINGS.—Cool and favorable for vineyards. Shipping considerable hay.

TULARE.—Irrigating. Large crop of grapes and corn. Many stock hogs shipped. No improvement in grain or fruit prospects.

KERN.—Grain about ready to cut. Haying still in progress. No change in fruit outlook.

SONOMA.—Cool, foggy weather has caused hay and grain to ripen slowly. Much hay of extra quality has been cut. Fruit of all kinds doing well.

NAPA.—Fruit crop, especially prunes and grapes will be heavy. Hay cutting shows from one-half to three-quarters of a crop; some few have full crops.

ALAMEDA.—Vegetables all shipped. Hay cutting progressing. Grain filling; crop light. Beets doing well. Grapes improving.

SANTA CLARA.—Cool, foggy mornings beneficial to maturing grain and growing beets. Haying continues; fruit and beets look well. Cherries going forward rapidly; packing berries and small fruits.

SANTA CRUZ.—Haying, fair crop; fruit also fair.

SAN BENITO.—Cool. Haying nearly finished. Prunes and peaches doing well.

MONTEREY.—Harvesting hay which will make but one-eighth of a crop. Fruit doing well; dewberries and raspberries ripening.

SAN LUIS OBISPO.—Hay nearly all cut, probably sufficient to carry remaining stock. Fruit and grapes doing well. Some grass will be cut. Potatoes and beets doing well.

SANTA BARBARA.—Cool and pleasant. Walnuts depend on later weather.

VENTURA.—Hot, east winds preceding week did some damage to fruit trees, blowing off fruit and breaking limbs. Apricot crop will be but half of last year's. Alfalfa under irrigation is helping stockmen.

LOS ANGELES.—Cool with frosty mornings. Oranges doing well and will show an increase of about one-fourth; lemon crop very light; grapes promise a large crop; olives a very light crop. Cutting barley, but crop is of little consequence. Supply of hay will come from elsewhere. Corn looking well. Grain is a total failure at Bassett. Honey crop a failure at Fernando.

SAN BERNARDINO.—Will not have as much hay and grain as expected; fair peach and apple crop looked for.

ORANGE.—Peanuts doing well; apricots ripening. Fine prospects. Hot winds injured beets slightly, cooking leaves and covering small plants with sand. Water supply good.

RIVERSIDE.—Cool and pleasant. Cutting grain and hay; very light crop. Apricots ripening; oranges growing nicely.

SAN DIEGO.—Cool and cloudy with light showers, making good growing weather. Grain is being harvested on high lands; also cutting first-class hay; apples promise fine yield; outlook for prunes good.

The following data for the week ending 5 A. M., Wednesday, June 15, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Last Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | .18 | 34.71 | 50.18 | 46.88 | 48 | 66 |
| Red Bluff..... | .14 | 15.13 | 24.91 | 26.20 | 56 | 98 |
| Sacramento..... | .00 | 10.39 | 17.28 | 20.87 | 50 | 80 |
| San Francisco..... | .01 | 9.38 | 23.24 | 24.31 | 50 | 68 |
| Fresno..... | .00 | 4.95 | 10.52 | 9.92 | 56 | 96 |
| Independence..... | T | * | * | * | 54 | 84 |
| San Luis Obispo..... | .02 | 7.20 | 20.75 | * | 46 | 74 |
| Los Angeles..... | T | 7.05 | 16.86 | 17.32 | 54 | 76 |
| San Diego..... | .02 | 4.99 | 11.78 | 10.38 | 56 | 68 |
| Yuma..... | .00 | 1.66 | 5.35 | 3.05 | 62 | 100 |

* No record.

HORTICULTURE.

Prune Growing in Sonoma County.

By N. G. FINLEY at the Sonoma Horticultural Society, Santa Rosa.

To grow prunes successfully is the aim and ambition of every person engaged in the prune industry.

The Soil.—To grow good prunes, the first and most important item to consider is the quality of the soil—its depth, nature of the subsoil and the advantages of proper irrigation. Prune trees will not produce fruit profitably in cold, wet, heavy land or land not properly drained.

The Tree.—Then the next question to solve is to procure good, healthy trees, not more than one year old from the graft. To do this secure your trees of the most reliable nurseryman who makes it his business, and do not under any circumstances take any stock in the so-called tree peddlers.

The next thing to consider is the care and training of the tree. Very much depends on the form and shape of the tree, and the distance the trees are planted from each other. Twenty-five feet is not too much for each tree to occupy, as experience has proven.

Trees planted fifteen years ago 20 feet on the square are to-day with their top limbs interfering. To produce a strong, healthy, vigorous growing tree requires constant care and judicious training.

Pruning.—The largest and best prunes are to be found on the trees that are the most open, with only a few large limbs systematically arranged by proper pruning so as to admit the sunlight freely and at the same time to allow a free circulation of the air. As a rule, there has been too much cutting back when the trees were young, thereby forcing a multiplicity of limbs, only to be cut away the following year. Trees at three years old should have only three large limbs and allowed after that time to continue growing without any "topping in," only using the pruning shears to keep any and all cross limbs from interfering. If this method is adopted at the age of five years the trees will commence bearing, and will continue to bear yearly, prunes of good size and of most excellent quality.

The trees should not be more than one year old from the graft at the time of planting in the orchard. With careful training the limbs should be allowed to grow from the switch planted out the first year. In the month of June, after planting, if the growth of the limbs is too luxuriant, pinch back the extreme points of the tender limbs, thus checking their upward growth for some two weeks, thereby enlarging and strengthening the limbs almost 50 per cent. Then each year afterwards keep the three limbs gradually growing taller and increasing size and gradually widening by allowing the proper number of lateral limbs to grow from the three main limbs or leaders, when at the age of six years you will have a tree that will be a "thing of beauty" and one that will thereafter annually yield an abundant supply of large and beautifully colored, first-class prunes, which, when properly dried and placed on the market in attractive style, will always command the highest market price.

Thinning.—The time has come in the prune industry when quality and not quantity should be the aim of every producer. The thinning of prunes when the trees are overloaded has been practiced only to a limited extent. The month of June is the time this should be done, if undertaken at all, as by that time nature has about accomplished her part in the thinning process.

Harvesting.—In harvesting the prune crop do not proceed with undue haste to relieve the tree of its tempting fruit. Let nature do her work by allowing the prunes of their own volition to leave the parent stem, and then you will have a prune in its perfection. Prunes should never be pulled from the trees. When this is practiced you have fruit when dried that should not be allowed to go on the market. In conclusion, to be a successful prune grower in the first place procure prune land on which to plant prune trees.

Bordeaux for Leaf-Curl.

We recently alluded to leaf-curl as controllable by spraying with Bordeaux mixture, even where it did not yield to lime, salt and sulphur. In the *RURAL* of Feb. 6, 1897, we gave the formulæ for the strengths of Bordeaux to be used before and after the growth starts. This treatment has been tried recently in Ohio and the Experiment Station has just published a bulletin of the results.

It is shown that leaf-curl flourishes under conditions of low temperature and abundant rainfall for April and May, especially if these conditions follow a season of excessive leaf-curl. Two such seasons following each other have just been experienced, and there is widespread complaint of the curling, coloring and falling of the leaves affected with the fungus. It has also been noted that leaf-curl prevails to a greater extent upon several fine varieties, including Elberta, Oldmixon, Mountain Rose, Globe, the Crawfords,

Red Cheek, Chair's Choice, and some others, while Salway, Smock, Wheeler and some others are much less susceptible, though somewhat injured at times. Trees badly attacked by curl are liable to drop some or all of the fruit.

The spraying experiments were conducted on a commercial scale in co-operation with William Miller of Ottawa county, Ohio, and have been carried on for three years. It has been shown that Bordeaux mixture is a profitable fungicide for scab, postular spot and leaf-curl, the stronger mixture being used for the application before blossoming, while half strength can be used to good advantage while the leaves are out. The first spraying for leaf-curl, to be effective, must be made as the buds are swelling and just before the blossoms open, followed by another after blooming. These two sprayings in 1897 reduced the proportion of curled leaves (diseased) from 88 per cent on unsprayed to 41 per cent on the sprayed—a difference believed to be sufficient to hold the crop of fruit. The results are even more striking when unsprayed trees were compared with those treated two years in succession. In 1897 such had but 7 to 8 per cent of curled leaves, while the unsprayed for the same time had 88 per cent curl.

Trials of Plant Originators.

Our esteemed friend, Mr. Luther Burbank, the distinguished originator of new fruits, has troubles like other men, and they vex him sore, for we find him writing to Mr. Jacob Moore, an Eastern horticulturist, these words:

"I, too, have been robbed and swindled out of my best work by name thieves, plant thieves, and in various ways too well known to the originator. After all my years of very extensive experience in the work of my special advantages of soil, climate, knowledge of the work and, above all, my character and standing as an originator, patience is at last exhausted, and except to complete some of the plant developments now well under way and the pursuit of a few scientific lines, shall quit the work at once and forever. Those plants now well developed towards completion will be disposed of at my own convenience and in my own way.

"It would be startling to the horticultural public if they knew the amount of pirating, thieving and wholesale robbery which the originator is obliged to submit to without redress. A plant which has cost thousands of dollars in coin and years of intensest labor and care, and which is of priceless value to humanity, may now be stolen with perfect impunity by any sneaking rascal. Better might the banker or the jeweler place their wares around promiscuously on a ten-acre lot than for an originator to possess plants of value, for he has absolutely no protection from the law and no encouragement to continue in the work for the sake of humanity, for the pirates often steal the poorest of its kind and laud it to the skies simply because it is in their possession, thus defrauding and deceiving the planter and defaming the good name of the originator. The above refers to pirates only, for I sincerely believe that no business men in the world are more honorable than nurserymen and florists as a class."

We hope Mr. Burbank may not find it necessary to lay down his work because of these trials. We hope, rather, that Mr. Moore and others who are working with him to secure for originators some protection analogous to the patent for invention, and the copyright for authorship, may succeed, and thus change the present deplorable condition of things.

Philips' Cling Peach.

TO THE EDITOR:—I am pleased to see by the *RURAL* of June 4th such a good report of the Philips Cling peach. This is, no doubt, the highest flavored and best canning Cling known. I am told by the canneries that they bring \$4 to \$5 per case for the best quality of canned goods. I have been growing this peach for a number of years and will give you the sales from twelve acres: in 1895, \$1100; 1896, \$1710; 1897, \$3200—an average of \$34 per ton. I contracted my crop of Philips' in February at \$45 per ton, and the heavy frost of March 21st and 22nd used up the crop for this year.

I want to praise myself a little (only once in a lifetime) for bringing out the best Cling peach known. The public has been very slow to grasp the good qualities of this peach, but I think now the planters are beginning to know its value. J. T. BOGUE, Marysville.

Time of Pruning and Bearing of the Lemon.

To bring the fruit of the lemon just before the lemonade season would save growers a vast amount of expense in handling, but the tree does not accept such a programme. Some have tried to regulate it by pruning, but J. W. Waite of Lemon Grove, San Diego county, says he has budded at all seasons and has observed no difference in fruiting. In regard to pruning, he pruned one grove last May and again in

December, another last April, part of another in June, the other part not at all; each of these groves were full of bloom in May and he could see no difference in them at all.

On the other hand, N. N. Farlow at La Mesa says: Pruning always brings out fruit buds or fruit wood on trees three years old, or past. To get summer fruit, say June or July, trees should be pruned in October or November.

Strawberries Not Poisoned.

We alluded recently to the scare over poisoned strawberries in this city and assured our readers that growers were not using poisonous sprays on strawberry plants. It is now stated that a number of prominent commission merchants met a few days ago at the store of P. Barbieri, 309 Washington street, to discuss the strawberry market. Mr. Barbieri, who was chairman of the meeting, said:

"We have made an investigation as to whether any poisonous matter was used in the cultivation of strawberries, and we find that there was no cause for complaint, for the farmers do not resort to such methods in the berry growing districts.

"The farmers, as well as the merchants, feel that an injustice has been done them in reference to the growing of this delicious table fruit. When strawberries are brought into the market an effort is made to sell them as quickly as possible, so that they may reach the consumer in a fresh condition. Berries should be used when fresh. It is better to submit berries to washing before use, in order to remove any sand that may be on them. In justice to the people of this city it may be said that heretofore many of the berry boxes used have been unclean, untidy, and unfit to carry strawberries or any other kind of berries that are marketed here. The producers should use nothing but a clean package to supply the trade. The commission houses should try to discourage the use of unclean boxes. It should be their endeavor to have baskets used inside of each box. These baskets ought to be used only once. Taking these suggestions into consideration, I think the people of San Francisco will find that the strawberries produced in this State are equal to any produced in any part of the world."

Renewing Old Trees.

I have been asked recently, "What would you do to renew my ten-acre prune orchard?" says "Orchardist" in the *Saratoga Item*. First, as soon as the leaves fall, or about the first of November, I would cultivate the ground with a disk, or cutaway harrow. This would save all the leaves which nature has provided to enrich the soil, otherwise the wind will carry them off the land. This is a matter that seems very small, yet if every leaf could be turned under the moment it falls and before drying up, each tree would furnish its own fertilizer each year.

Retaining Moisture.—Second, keep the ground free from weeds until the first of February, if possible. Up to this time you should have gone over the ground after each heavy rain so as to keep the surface mellow, and this is a point that few take note of. Mellow soil will take in two inches of rain in twelve hours, while a soil that is hard will not absorb the water, but it will run off to the low places and do but little good to the land.

Third, Pruning.—I would commence as soon as I was done cultivating the first time. On this point a great many mistakes have been made, principally in cutting away too much from a vigorous growing tree and too little from a tree that is almost dead, or cutting large limbs from a healthy tree and cutting the tops off a tree that is at a standstill.

After thirty years of close study of the growth and habits of different trees, I find that many fine orchards that are healthy and in a fine growing condition have been utterly ruined by too much pruning, and I have seen orchards that were in a poor condition, which a little practical pruning would have put in good condition, die for the want of it. During the month of June, which is the most trying time for the prune tree (because at that time the new wood hardens, the leaves mature and the pit begins to harden), go through your orchard and if you have trees that are not up to your standard of healthy growth you can very easily detect them, for they will not have that bright green color, but will show a yellow tinge. Now is the time to mark them. With your knife shave a small piece of bark from some limb, so that you will know the tree when you prune. If the whole orchard is bad, mark every tree. Put some kind of a mark on each, so that you will know at a glance its condition and prune according to condition of the tree.

Rules for Pruning Sickly Trees.—If a tree is very much on the decline I would cut away half of the wood and as near the body as I could get, always trying to have what remains to balance as near as possible. What you want is to start out some new branches. As a rule, with few exceptions, if you cut off a branch near the body, you will get several

new sprouts the same year. Select the best when 6 inches long and then rub off all the balance. When these new branches are from 12 to 20 inches long, according to the strength of the tree, pinch out the top, which will cause them to branch; if they grow too rapidly, pinch them again. These new branches will have to be held in check or they will sap the life out of the balance of the tree. The next year, if your tree does not meet the growth you desired, cut another limb and get some more new sprouts. Never top a tree that is in poor condition; if you commence it, your trees are doomed. You cannot build up from the top—you must commence from the body or from the large limbs. Look at nature how she prunes. A limb breaks off; the next year you get several sprouts, not from the top, but just where the limb broke off.

Fourth, Plowing.—Plow during March, if possible. In throwing the soil to the trees, first clean all grass from the trees with hoe and get as close as possible with one-horse plow—at least, three furrows on each side; then, with two-horse plow, get a little deeper for three furrows. This will bring you from the trees about 6 feet; the balance of space plow as deep as possible—from 1 foot to 15 inches if you can cut all the roots that come in the way. Now, in the bottom of these deep plowed furrows I would have a man follow me and sprinkle bonemeal at the rate of five pounds per tree, which will cost about \$7.50 per acre. This deep plowing answers two purposes—root pruning and mellow bed for the new roots that will form on the ends of the cut roots. Turn two furrows back in the open furrow and pulverize the soil as fast as it is plowed. Never let a weed go to seed. Keep the soil mellow, and, after the middle of April, roll with corrugated iron roller; and unless you have a very wet April, you will see your trees show a new life and vitality. If the month of April should be wet, leave your furrows open to drain off surface water. Remember the spring of '93, when so many trees died from too much water late in the spring!

FLORIST AND GARDENER.

Sweet Peas and Sweet Pea Seed.

By LESTER L. MORSE of Santa Clara at the State Floral Society in San Francisco, June 10.

To all those who love sweet peas it is very pleasant and refreshing to find so many interested in the flower and a gathering of this kind, wholly in the interest of the sweet pea, proves that its popularity is as great as ever. We all thought that there was a sweet pea fad a few years ago and rather expected it to die out to some extent, but we are all greatly pleased to find that the demand for the flower increases and the seed dealers are using more seed every year and the seed growers are planting a larger acreage of land for seed in consequence.

The Seed Trade.—Ten years ago a large seed house would probably use 500 or 1000 pounds of seed of four or five colors and a larger portion of mixed, and the whole world would probably not use over 10,000 pounds, while now the world's trade will use no less than 250,000 pounds annually and there are no less than 500 acres of land in California alone devoted to the production of sweet pea seed.

This year, or more properly the season of 1898, would have been much the largest sweet pea year on record except for poor crops in California, which will mean less than half a yield, and now that our State is recognized as headquarters for the world's supply of sweet pea seed, it will mean that the whole world will be somewhat short of seed to plant next fall.

Place of the Flower.—The sweet pea has come to stay. It is one of our staples now, and demands the same place among lovers of flowers that is held by the rose, chrysanthemum or carnation. Being an annual grown from seed, it is a seedsmen's flower, and the seed is as much of a staple item as any other seed he handles. It is handled by the nurseryman and florist as well, which means it occupies a larger field than most flowers, for even such favorites as the rose, chrysanthemum and carnation have no place with the seedsmen, and the verbena, aster or pansy have no place with the nurseryman and florist.

Florist's Use of It.—The sweet pea is not confined to the common garden, but competes with fair success with all other flowers in the florist's business and is an important item in the cut flower trade. The list cultivated for cut flowers is not a long one. Usually a good white, a good lavender, a good primrose, a pink and a red are in demand with the florist, while the darker sorts do not seem to be popular. The use of sweet peas in the florists' stores is quite a recent affair, and the public demand which made them a commercial necessity proves to us more than anything else that the sweet pea has a permanent place in the flower world.

Charms of the Bloom.—The sweet pea has several peculiar features of decided merit. It possesses a most delightful fragrance; the blooms are gracefully poised on fine long stems; it makes a beautiful bouquet for vase decorations; it is blessed with innumerable

colors, tints and shades, both self colored and in contrasting and blending effects. It is easily grown, usually requiring only that the seed be dropped in the ground and then allowed to grow.

Points for Amateurs.—I sometimes think that where people meet with failure is in giving the sweet pea too much care and attention. But it has some destructive enemies which need attention. Slugs and cut worms insist in eating the young sprouts and very often take everything as fast as it comes up. The only successful way of treating these enemies seems to be to catch and kill them and this ought to be done every day until the plants are up 6 or 8 inches high; from then on they seem to be quite safe and able to weather most anything but lack of water. They stand frost pretty well—that is, such frosts as we experience in our climate, and they will stand considerable water.

Some have excellent success by planting their seed in a box and transplanting when the shoots are 2 or 3 inches high. By treating this way you can avoid the danger from cut worms.

Your sweet peas are very apt to receive too little water and very often when they are looking weak and sickly it is from want of moisture. It is always best to apply the water at the roots and never spray the whole plant. The best way is to run the water in a trench and let it seep through to the roots. To have a covered trench of fertilizer between the water and the seed row so that the seepage goes through the fertilizer, is a very excellent plan as it invigorates the plant and makes it thrifty.

Planting.—I want to correct the impression that sweet pea seed ought to be planted deep. I disagree with those who advocate planting in the bottom of a trench, for the few successes from this method are more than met by scores of failures. The part of the vine buried in this way is never meant to be covered and ought to be exposed. You couldn't make it stiff and self-supporting if you covered it up a foot, and there is no good reason for putting more of the vine underground than nature intended should go. It is best to plant in rows with the seed not closer than 3 or 4 inches apart and cover about an inch with earth. The white seeded varieties even do better to be hardly covered at all and do not want to be kept too wet, though quite moist.

There are three very distinct looking kinds of seed, the common black, the small spotted brown and the white. The white seed will always produce a pure white or pale primrose flower; the small spotted seed always produces a flower with lavender or mauve predominating in its coloring. What we call the black seed is either large or small, very black or greyish black according to the variety it produces.

It is best to plant early, in November or December, and the plants will be in full bloom in May and June—just when the weather is best and before the hot weather and dry winds of summer come on. It is true that the plants seem to grow slowly, but they are developing all the time. When the days begin to lengthen in March the sweet pea vine grows wonderfully and the seed planted in March or April will be from a month to six weeks behind your early sown.

Exposure and Training.—The sweet pea loves air and light and usually sunshine. It does best planted away from trees and not in too much shade of any kind. For some reason they thrive grandly in a foggy climate and seem to love sea air and in such climates the blooms grow very large and retain their colors very well.

They look best planted to a hedge out in the open—the hedge being formed by allowing the row of vines to grow on a trellis trained on both sides about 6 feet high. The rows ought to run north and south if possible and if in double hedges do not put them closer than 5 feet apart. They look very pretty climbing up a board fence or on a tennis fence, but usually they do better to be where they can climb to the top of anything. A large plot of land can be planted in rows 3 feet apart with the seed 4 or 5 inches apart and allowed to grow without any support. Planted in this way they should be hoed quite often and thoroughly cultivated and then with sufficient rain they will cover all the land and climb upon one another 4 or 5 feet high. This is the manner in which they are grown on the seed farm and when acres of a color are all in full bloom they make a grand picture. While the plants grow profusely and the flowers grow large in foggy or moist climates, there is no place in the world where they seed so well as in the drier and sunnier portions of California if the soil is moist and rich and rains are abundant, for they must have rain and no amount of irrigation will be a substitute for good spring showers.

Varieties.—The list of names of sweet peas now seem to be entirely too long—not that we can spare any of the later introductions, but we have outgrown many of the old varieties which have been superseded by new varieties of better form and substance. A seed house now, to include everything, would have to list no less than 130 names. There are a great many synonyms of course, but nearly every variety has some distinguishing feature, usually in size and form, and we think that a variety double the size of

an old type deserves a new name and a new place even if it carries the old coloring.

Then the form varies greatly in different varieties and the seed grower is inclined to classify them according to form instead of color. There is the small open form like Cardinal; the large round standard and open form like Lemon Queen; the semi-hooded like Mrs. Eckford; and hooded form like Countess of Radnor. All these forms vary to a greater or less extent making it extremely difficult to know just how to classify them. We are inclined to favor the hooded form, as the blooms are apt to be large and very gracefully poised on the stem.

One of our more recent selections, however, shows a new form which we think more attractive than any other. We call it fluted owing to its peculiar ruffled effect. It has a more open and generous look and is decidedly pretty and graceful.

Points of Excellence.—There is form, substance, size and color to be considered in judging the sweet pea blossom. We want them large; we want the improved or hooded form, and we want the color to stand the sun without burning. Some of our best varieties burn badly, the standard turning brown or black and giving the blossom a poor appearance. Such varieties as Orange Prince and Lemon Queen and Mars are affected this way and but for this they would be very desirable varieties.

Nearly every color is duplicated by several names, and we must begin at once to prune down the list. For instance, in bright cardinal we have almost exactly the same shade in Cardinal, Invincible, Carmine, Harvard, Ignea, Firefly, Brilliant, Mars and Salopian. We only need one of this color and Salopian being superior in form, substance and size naturally should supersede all the others and we can cut out most if not all of them.

The seed grower and dealer are trying to come to an agreement in relation to a revised list to include only the improved and desirable varieties.

Novelties.—Every year we find a few entirely new shades, and there is more development along this line now than ever before. Every departure in coloring or in blending of colors or combinations of shadings, as fast as it has been fixed and comes true deserves a new place and a new name and if you could get a glimpse of the seed growers' trial grounds you would see scores of these new things being selected and developed ready for an introduction to the eager public.

Mr. Eckford has been giving us six new ones every year. Mr. Hutchins calls them "orthodox six," since they have been coming to us that way for nearly ten years. Some of Mr. Eckford's later introductions do not possess great merit, but I notice some new features in every one of his novelties, though the feature is not very clearly marked in some. We like to try them two years in our climate before judging them critically as seed saved by ourselves gives us better results than his seed.

Eckford's last year's set contained seven novelties and four of them are quite distinct, these four being Queen Victoria, Salopian, Lady Nina Balfour, and Triumph.

His set this year does not seem to include any sorts of real merit, but we will want to try them another year before we know definitely. The set contains Black Knight, Duke of Sutherland, Duchess of Sutherland, Colonelist, Chancellor and Lady Mary Curry. His Duchess of Sutherland proves to be a synonym of Modesty, a variety sent out by ourselves one year in advance of his. Last year we introduced eight new sorts, viz., Pink Cupid, Stella Morse, Sensation, Modesty, Lottie Hutchins, Wawona, Dolly Varden and Oriental.

Chance Seedlings.—The seed grower who cultivates a large acreage has an excellent opportunity to develop new varieties. It is done most satisfactorily by discovering sports or off plants and these are selected and the following year the seed is planted in the trial grounds, where they are carefully examined and compared with the other sorts. Only a few of such selections really display any great merit and the majority are dropped, but quite often we find we have discovered a really new thing and then the seed is saved very carefully with a view to getting sufficient stock seed to plant a fair sized breadth of land the year following ready for introduction. Sometimes, in fact frequently, a variety will refuse to reproduce its kind and we call this breaking. Instead of pink or primrose color it will come a dozen different shades in about equal proportions.

No variety covering as much as a quarter of an acre of land will come so true as to be entirely pure. It will always show a greater or less percentage of off colors, and the careful seed grower sees to it that these are all taken out before the pods are formed, and only the true type allowed to seed. In doing this "rogueing" one frequently runs onto something new and of great merit which makes it necessary to have intelligent and experienced men only to do it. Nearly all the varieties we have come from originally a single plant which was unjustly called a rogue at one time.

Crosses.—Some of our best sorts, however, have come from crosses, the result of a process of crossing the pollen of one variety onto another. This is quite a difficult operation as the pollen must be

mixed in the young bud and only a small percentage will catch. The results of this process are generally very unsatisfactory though in a few instances we have secured decided acquisitions. The seed grower is always on the lookout. He knows at a glance whether he sees something new or not and determines at the same instant whether or not it will be popular with the public if it is new. He has in his mind a long list of new tints and colors that he would like to discover, long before the flowers begin to bloom, and from the time the first bloom opens to the world in spring until the last one fades away in the early winter he is on the alert to find something new and interesting. Then at the close of the season he has hundreds of packages of seeds, each a selection or a cross for trial and in due time all this seed is planted out, carefully recorded and he begins to grow impatient for another year to begin.

Morse's Sorts.—In 1895 we put before the world for the first time our White Cupid sweet pea—an entirely new departure in plant growth. It received the greatest amount of advertising ever given a flower novelty and was given an award of merit by the Royal Horticultural Society of London and by the Societe D' Horticulture of Paris. It met with some trouble in the East the first year owing to the failure to properly plant the seed and also from the want of an intelligent understanding of the way to treat the plant.

Last year we sent out the Pink Cupid and it has done much better East, and we believe gardeners and everyone else will soon learn how to use the new race of Cupids and will find new uses for the plants as they try them from year to year.

Uses of Cupids.—Cupids should hardly be classed as a sweet pea for they have none of their characteristics excepting the coloring and the fragrance. The climbing and the bouquet effect are entirely wanting of course and consequently they do not want the same position in the garden as sweet peas.

Cupids can be used in any position given to the verberna or plants of that style. They make an excellent bedding flower and for a broad extensive border are unexcelled. We have them growing on the sidewalk next to the stone walk and everyone pronounces them most unique. We have also used them for a long border about 100 feet in the row and find them very pretty. The blossoms opening out so profusely on the top of the plant gives such a perfect wreath of color that the effect is very different from the sweet pea and they present a decidedly novel appearance.

Cupids have come to stay and when our gardeners learn how to use them, we are going to find them indispensable. We will soon have them in a great variety of colors and then we can work them in wherever a pretty border or a showy bed would benefit the garden.

A Bush Sweet Pea.—Next year we will put before the people another style of plant which we call a bush. It is going to make an excellent dwarf hedge row and can occupy almost any place in the garden, with very little support for it is able to stand almost alone.

After some experimenting we will begin to find new uses for it as well as Cupid and we anticipate for it a large demand after it is thoroughly well-known. There are other forms of plants and many other shades and colorings too numerous to mention in process of development, and there are new things in store for us awaiting introduction for some years to come.

Sweet pea seed is cheap—if not the first year of introduction, it is the second, so all can afford to buy a few seeds of the new ones every year as they are introduced and see just what the stranger deserves—whether it deserves permanent place in your affections or whether you pronounce it unfit for your society and not to appear in your garden again.

Garden Making.

California home makers will find good suggestions in a book entitled "Garden Making," by Prof. L. H. Bailey of Cornell University, published by McMillan & Co. The greater part of the book is devoted to the planning of the home garden, the methods of laying out the home grounds in a natural and artistic manner, and valuable lists are given of the trees, shrubs and climbing vines suitable for use in different locations, of the most satisfactory flowers for the flower garden, and the best vegetables to plant for home use. Small fruits receive much attention, and there is not a branch of garden making which is not touched upon. The book is written in a very attractive manner, is fully illustrated, and is well calculated to arouse an enthusiasm for garden making. It can be ordered from the RURAL PRESS at \$1 per copy.

Growth of Willows.

At the Chico forestry station of the agricultural department of the State University the successful experiment has been made of introducing a new species of rapid growing willow from Asia Minor. Six-inch cuttings of the new tree—the *Salix salmonei*—at the end of thirty-one months (ten months in the nursery and the remaining twenty-one months in the

grove) reached the height of 32 feet. The circumference of the tree was 52 inches and the spread of its branches 12 feet. The wonderful quickness of this growth is realized when compared with that of the common basket willow, which in the same period reaches a height of 7½ feet, with a girth of 5 inches and a spread of 5 inches.

THE VETERINARIAN.

Gravel and Colic in the Horse.

TO THE EDITOR:—Will Dr. Creely please explain the difference in the symptoms accompanying, by the horse, an attack of gravel and one of colic?—E. C. W. MACDONALD, Aptos.

Urinary calculi, or gravel, rarely occurs in the horse. The calculi would soon be cast into the urethra, and in the mare the urethra is very wide and calculi never remains fixed in it. Urethral calculi may readily be recognized in the stallion and gelding by difficulty in urinating. The animals place themselves in position to urinate, but can only discharge fluid in drops or in a small stream. Sometimes the upper portion of the urethra is abnormally distended. Thoroughly grease the hand and arm and introduce into the rectum; feel below, and the calculi or gravel may be easily felt. The bladder will be greatly over-filled, but on pressure urine fails to discharge or comes in drops. In gravel the urine is passed more frequently, but in small quantities, often in drops. When the animal has been driven fast the fluid may be blood-stained on account of the stone injuring the mucous membrane.

Colic is easily diagnosed by more or less abdominal pain, such as pawing, getting up, throwing themselves down with more or less force, turning the head to the side, etc. Colic is divided into spasmodic and flatulent. Flatulent is easily told by the great amount of swelling and distension of the abdomen, constant pawing, and sweating in aggravated attacks, and the passing of gas from the rectum. The spasmodic is more painful and active, without swelling of the abdomen.

Inflammation of the bowels is easily told by the continual pawing, great prostration, and when turned loose they continually walk in a circle. If in a box stall, a perfectly circular path will be found.

510 Golden Gate Avenue.

DR. CREELY.

More About the Collapse of the Massachusetts Tuberculosis Warfare.

Three weeks ago we gave an interesting account of the abandonment of the Massachusetts policy of killing reacting cows to stamp out tuberculosis. The facts as shown by official publications are given a different and very forcible grouping in the *Orange Judd Farmer*, and we shall draw from it to place our readers in possession of the fullest information about a policy that has signally failed.

The Cost and the Results.—The old Bay State has spent three-quarters of a million dollars during the past four years in an effort to stamp out bovine tuberculosis. Disgusted with the paucity of results, the Legislature this spring refused to appropriate further funds, and the work is now being closed up. The attempt to exterminate tuberculosis by killing all animals that responded to the tuberculin test has had a thorough trial in Massachusetts. At first it was bitterly resented by the farmers because of the arbitrariness of the over-zealous State veterinarians, and because only half value was paid by the State for the cattle killed. But since full value, appraised on the basis of health, has been paid, and especially since the offending veterinarians were removed, farmers have co-operated more heartily to give the policy a fair trial.

The Method.—The State employed a local inspector in each town and city to carefully inspect all neat stock. Any that appeared at all diseased were put aside as suspects, were then tested with tuberculin, and if they reacted (that is, if their temperatures went up after the tuberculin was injected) they were condemned as tuberculous, killed and sent to the rendering tank. In this way all the stock in the State was inspected each year, including an average of 175,000 cows and 35,000 other neat stock, or a total of 210,000 head. Last year's work was the most thorough, yet by careful physical examination only 9844 cattle were suspected of having consumption, and but half of these, or 5062, reacted. Thus only 2.4 per cent of the cattle inspected proved to be diseased. If the test had been applied to the other 200,000 head, it might have reacted on many that passed the physical examination.

Limited Extent of Serious Disease.—But since only 4 per cent of the cattle condemned last year proved to be badly diseased, while 33 per cent of those condemned in 1895 were suffering from "general tuberculosis," two things are evident: One, that the physical examination was very thorough in 1897; and two, that badly diseased cattle had been about all destroyed by the work of the previous year. The largest number found to be generally tuberculous was 1051, in 1896, or about one-half of 1 per cent of all the cattle in the State. Since very few badly diseased animals escape the physical examination, and since only 183 such animals were found last year, it seems to be fully established that consider-

ably less than one-half of one per cent of the neat stock in Massachusetts was seriously tuberculous, and that the proportion now is still less. The great bulk of the stock that react prove to be slightly diseased. Most of them would recover under proper care, and the meat of most of the carcasses would be healthy food. It appears that 96 per cent of the cattle condemned last year belonged to the latter class.

What the Above Results Cost.—To weed out some 2500 badly diseased cattle from about 210,000 head during the past four years, 10,000 head that were but slightly affected had to be slaughtered, their carcasses and hides netting only about \$1 apiece. The job has cost over \$700,000, or at the rate of \$28 per head tested and \$57 per head condemned, or \$21 for each farm in the State. Nearly \$500,000 of this expense was for cattle killed, but aside from this item the operating expenses (\$220,000) averaged nearly \$9 per head tested or \$18 per head killed. As the more than 12,000 head killed were worth at least \$33 apiece, it cost more than half their value to condemn them. If the operating expense be charged wholly to the nearly 2500 found to be badly diseased, the job cost almost \$100 apiece.

Extent to Which the Disease is Reduced.—The following table gives under A the results of the first test, and under B the results when the same herds were retested two years later, except that in group three nearly three years elapsed between the tests. The Ellis herds are kept under the most sanitary conditions possible; extra care was taken by the owners of the other herds. Only tested cattle were added to these herds to increase their number:

| | | No. of herds. | No. cattle tested. | No. condemned. | Per cent condemned. |
|------------------|---|---------------|--------------------|----------------|---------------------|
| Group one..... | A | 5 | 181 | 63 | 34 |
| | B | 5 | 141 | 43 | 30 |
| Ellis herds..... | A | 4 | 285 | 41 | 14 |
| | B | 4 | 481 | 39 | 8 |
| Group three..... | A | 3 | 74 | 8 | 11 |
| | B | 3 | 108 | 18 | 17 |
| Totals..... | A | 12 | 540 | 112 | 20 |
| | B | 12 | 730 | 100 | 15 |

One Ellis herd of sixty-nine head tested in 1894 showed 42 per cent diseased; retests in 1896 of the same herd of seventy-nine cows condemned 16 per cent, and tested again last year this herd of 134 cows showed 17 per cent diseased. In this particular herd, therefore, there was rather more disease after two years' testing than before. But the four Ellis herds, which during the two years were increased from 285 to 481 head, show a decline in the proportion of diseased cattle from 14 to 8 per cent.

The five herds in group one show a slight reduction in proportion of disease, but one of these herds had 54 per cent condemned on the second test, compared to only 37 per cent at the first test. The herds in group three were retested the third year after the first test, the proportion diseased proving to be larger than the first.

The total shows that twelve herds, increased only by the addition of tested cattle, contained an average of about 15 per cent that responded to tuberculin two years after the herd was first "cleaned up," against 20 per cent at the start. Here was a reduction of one-fourth in the number that reacted, with a probability that sanitation had greatly lessened the proportion badly diseased.

These Conclusions Seem Justified:—1. The Massachusetts system has almost exterminated the badly diseased cattle, but these at most constituted less than one-half of 1 per cent of the total number in any one year, or about 1 per cent if the total number for four years be taken, in a State where the disease is presumed to be more prevalent than in any other part of America. The system appears not to have materially reduced the proportion slightly diseased that react to tuberculin.

2. To find and slaughter these badly diseased animals cost about \$100 a head, besides nearly \$500,000 paid to farmers for cattle killed. Four out of every five head killed were but slightly diseased, might have recovered, or were available as healthy meat.

3. Such a system is too outrageously wasteful, too horribly extravagant, too utterly unscientific, too senseless, and too impractical to ever be repeated.

4. Tuberculin evidently does not injure healthy cattle; it reveals the presence of tubercles, except in advanced cases, but is no measure of their extent; whether it aids in curing mild cases or tends to render them malignant is not yet settled. To kill simply because a test reacts is folly.

5. The positive failure of the radical methods to accomplish the purpose sought lends added importance to the truth laid down by this journal when the radical policy was begun—that separation from the herd of animals suspected by either tuberculin or physical test, ventilation, disinfection, good food but not a forcing diet, pure water, are the practical means of combating consumption in cows. Common sense and sanitation will do the business. Education and agitation should be along these lines.

6. In all these years the milk or beef from a tuberculous cow has never been positively proven to have been the direct cause of consumption in a single human being. While such danger exists, it has been grossly exaggerated, as shown by the widespread decrease in consumption coincident with a large increase in the per capita use of milk.

AGRICULTURAL REVIEW.

CALIFORNIA.

Alameda.

EFFECT OF LATE RAINS.—Pleasanton Times, June 9: Some of the finest crops in this valley are to be seen at Mr. De Lopez's place, the Merriwa Stock Farm. There are several big fields of wheat standing nearly 5 feet high. This will be cut for hay and it is calculated that it will yield fully four tons to the acre. Mr. De Lopez says that before the late rains his grain only stood about 8 inches high.

LEMON PLANTING.—Oakland Enquirer, June 9: A carload of lemon trees, numbering between 7000 and 8000, arrived June 10 from Los Angeles. They are booked to F. C. Havens of Piedmont and are to be planted along the foothills. They are two years old. Commissioner of Horticulture A. D. Pryal inspected them on their arrival and found them free from insects. Mr. Pryal says that lemons grow well at Claremont and along the foothills. The Kimball place, the Stone place and Mr. Pryal's farm all have bearing trees. There are at least fifty growers of lemons in the county.

PEACH PRICES.—Irvington Press, June 9: A fruit raiser in Niles has been offered \$50 a ton for his entire crop of peaches. This is about twice as much as they brought last season. Apricot trees about Niles will yield quite heavily, but in other parts of the township there will be only a fair crop.

Butte.

THE BIGGS CANNERY.—Oroville Register, June 9: The proprietor of the Biggs factory has purchased about all the fruit along the Feather river north of Marysville. The probable yield in peaches this year is 550 tons, which, had the frost not killed the greater portion of the crop, would have exceeded 1000 tons; but, by filling in with other fruits, the management intend to pack, all told, between 600 and 700 tons fruit, as against 900 tons packed last year.

THE BIGGS CREAMERY.—Gridley Herald: The creamery at Biggs, the only one in Butte county now in operation, has made a very creditable showing during the first year of its existence. Though the institution has not made any money for its stockholders, it was for several months self-supporting, and with the increase in patronage which is sure to come, it will no doubt be the nucleus about which a profitable business will ultimately be built up. The following figures show the total amount of milk received from June 1, 1897, to June 1, 1898, and total amount of butter made from milk received:

| | Lbs. Milk. | Lbs. Butter. |
|----------------|------------|--------------|
| June..... | 24,287 | 772.25 |
| July..... | 23,400 | 862.75 |
| August..... | 27,202 | 588.50 |
| September..... | 24,934 | 810.35 |
| October..... | 15,524 | 728.50 |
| November..... | 12,462 | 616.75 |
| December..... | 11,087 | 423.00 |
| January..... | 14,320 | 355.25 |
| February..... | 14,725 | 653.25 |
| March..... | 35,119 | 632.00 |
| April..... | 50,003 | 2,181.00 |
| May..... | 41,784 | 1,656.00 |
| Total..... | 294,837 | 10,585.50 |

At 20 cents per pound, which was somewhat below the average price obtained for the product, the amount of money received for the milk separated and made into butter is \$2117. Add to this the feed value of the skim milk returned, and the gain in weight of hogs, calves, etc., fed on this product, and the returns to the dairies which are patrons of the Biggs creamery amount to about \$3000.

Fresno.

SUGAR NOTES.—Herald, June 11: Not a single pound of new wheat or barley has been hauled into the Sanger warehouses as yet, and it is not likely that there will be more than a few hundred tons of either cereal harvested in this section altogether during 1898. Hundreds of acres have been planted to potatoes, corn, pumpkins, beans and other vegetables this spring, and the crops never looked better, especially along Kings river. A vast amount of feed for live stock will be produced and many will be able to carry their stock over another year.

RAISINS CHEAP AT THE EAST.—Expositor, June 9: Some samples of Fresno raisins have just been received from Sprague, Warner & Co. of Chicago, the principal wholesale grocery house of the West, which contain an object lesson in prices that it is well for producers to consider. The first sample is of three-crown raisins, which the company purchased, packed and laid down at Chicago for 2½ cents a pound. The goods are of the first quality, as good as any sent from this place last season. After deducting freight charges, packing, commission, etc., this price does not allow the producer quite 1½ cents a pound. The second sample is of the four-crown grade. The raisins are beauties. They were purchased in Chicago at 3 cents a pound, which is equivalent to about 1½ cents to producers. The facts furnish excellent examples of how the prices for raisins have gone to pieces. The growers must do something this year to control the crop or their experience this season will be the same as that of last.

POULTRY MEETING.—Republican, June 10: The Fresno Poultry and Pet Stock Association met last evening, with the following present: President Henry Glasford, Chil Ewing, R. J. Venn, Willie Wainwright, J. Ure, Dr. B. Graham, A. V. Lisenby and Dr. S. L. Chapman. It was decided to hold the annual poultry show of the association on the 14th, 15th and 16th of December. The secretary was instructed to secure a judge for the show.

VINE HOPPERS ABSENT.—For some time very little has been heard about the thrips. The vineyardists in the early part of the season were greatly alarmed over the number of the pest which swarmed their places and arose in clouds whenever a vine was disturbed. The previous year the winged destroyers wrought a great deal of damage, and it was feared that again this year they would suck the sustenance from the leaves. But the alarm disappeared quite suddenly; no more lugubrious predictions were heard, the University men no longer came to study the pest, and, in fact, nothing more was heard about the hoppers. "There is not a thrip in Fresno county," replied Alex Gordon, the vineyardist and president of the Farmers' Club. "I say not a thrip; there might be a few here and there, but I believe you'll have to look all day to find one now, when a few months ago there were swarms of them. I never saw anything disappear so completely in my life. Very few were hatched this year, and all the old ones have died. I hardly think there is one on my vineyard. If there is, he is very lonesome."

Humboldt.

CROPS.—Ferndale Independent: Talk about the growth of grain and hay; I have never seen anything to equal it. My friend Swortzel remarked the other day that Humboldt county can supply the State with hay this year, and I verily believe that he told the truth. It can't well be otherwise with the favorable weather which we have enjoyed for a month.

DAIRY STATISTICS.—During last month the shipments of butter were over one-third greater than those for the previous month, or 453,858 pounds as against 321,095 pounds in April. The increase for the year is shown by the following comparisons: January, 93,300 pounds; February, 66,100 pounds;

March, 132,970 pounds; April, 321,095 pounds; May, 435,858 pounds, making the total for the year so far 1,154,323 pounds, an equivalent of nearly a quarter of a million dollars in returns. Shipments of condensed milk during May amounted to 190 cases, and of dressed veal there were 143 carcasses exported. All of this produce was shipped to the San Francisco market.

Kern.

HAY PRICES.—Bakersfield Echo, June 9: The alfalfa hay market is gently descending, say the local dealers. A few weeks ago some producers refused \$13 a ton for it. Now it is different. They are letting the same hay go at \$11 per ton. Everybody is haying just now and, generally speaking, the first crop is quite a heavy one.

Kings.

FEED.—Hanford Journal, June 10: Wild feed is growing finely at Dallas since the recent rains, and thousands of head of cattle and horses, many of which came from other localities, are getting fat on the various farms of the vicinity. Dry years or wet years do not matter materially to this locality, for the big alfalfa fields always grow more or less, and what is lacking in quantity is always made up in price. The alfalfa in this vicinity, where it has not been mowed, gives promise of the largest crop of fine alfalfa seed that this section has ever seen.

Los Angeles.

ORANGE TRADE.—Herald: There is nothing to induce orange shippers now to send their fruit to market, and it is probable that as much as can be kept on the trees for two or three weeks or more will not be touched. In fact, there is every probability that shipments will be made in August. Last week's shipments from southern California were 279 standard cars of 336 boxes each, as against 107 for the same time last year and 126 for the year before that. The total to June 1 for the season is 12,326 carloads, as against 6817 for 1897 and 6234 for 1896. There are, it is said on the authority of the San Bernardino Sun, several hundred carloads of iced fruit now in the East which will have to be sold before there can be any more shipped with any profit.

CORK OAK.—Pomona Progress, June 9: On the south side of Second street, between Parcels and Rebecca streets, next to C. E. Freeman's residence, may be found a genuine cork oak tree. The acorn was secured some years ago by Andrew Osgoodby and given to a nurseryman to plant. The tree is now about 5 inches in diameter at the base.

COVINA ORANGES AND LEMONS.—Argus, June 11: The manager of the Covina Citrus Association informs us that despite the somewhat unsatisfactory condition of the orange market during the past season, the Association expects to net to the growers a little over \$1 per box on three grades of Navel. A car of lemons shipped by C. Vaughn and the Azusa Lemon Curing Co., to Wichita, fetched \$615 f. o. b. this week. This will net the grower \$1.26 per box.

Napa.

HAY.—Register, June 10: Haymaking has commenced in earnest and the balers are at work preparing the crops for market. This season's output will be the largest and best for several years. Some large purchases have been made in the field. Several of those made earlier in the season were at good figures. The late rains will add materially to the grain crop, which, from present prospects, will also be large. Most of the output will be stored anticipating the ultimate recovery in prices.

HEAVY GRAIN HEADS.—G. N. Briggs brings to this office heads of bearded wheat found in a field of grain on the Duhig place, southwest of town. The seed was sent to this country from the Highlands of Scotland several years ago, and the late John McPike tried it in the San Joaquin country, but the heads were too heavy for that windy section and were threshed out before the harvester could get in his work. In this country, however, it can be successfully grown, and as it yields about double the quantity of grain to the acre produced by the ordinary club wheat it is sure to find favor.

Placer.

NEWCASTLE FRUITS.—News, June 8: Several carloads of Newcastle's choicest varieties of the early fruits have already gone out since the first of the week, and a carload is nothing unusual for a firm to send on its way East each day. Fruit is meeting with good prices, especially peaches and plums, and the year gives promise of being a profitable one for both grower and shipper.

Riverside.

ORANGE SHIPMENTS.—Press, June 11: The orange shipments for southern California last week were 207 standard cars of 336 boxes each, as against 102 cars for the same week last year. The total shipments to date are 12,532 standard cars, as against 6919 cars for 1897 to this date.

San Bernardino.

REDLANDS HORTICULTURAL CLUB.—Facts, June 9: The Horticultural Club held one of the best meetings in many weeks yesterday afternoon. E. A. Moore, R. S. Thompson and Prof. Paine all testified that their observation was that orchards properly fertilized retained their fruits, while those not fertilized did not, and they cited several conspicuous instances. H. B. Lane was of the opinion that thorough cultivation will do a great deal to overcome the evils of a shortage of water. Mr. Freefield said his experience was that deep cultivation has decided advantages over the usual shallow cultivation. "Is summer fertilization a paying investment in Redlands?" brought out some valuable opinions. E. I. Martin and Mr. Thompson said their experience led them to believe that it is. Prof. Paine stated that in a well fertilized grove he had only 5 per cent of culls in the latter part of May and 75 per cent of fancy fruit. Dr. King said that in the application of barnyard manure there should be abundance of water. He had no experience with commercial fertilizers, but thinks they should be used sparingly, especially in dry seasons. He considers barnyard manure the best. President Moore said that stable manure, to a depth of 3 inches, kept the ground moist under his trees.

San Diego.

APPROVED SQUIRREL POISON.—Escondido Times: Following is the formula of B. F. Dixon for preparing squirrel and gopher poison, as given at the late Farmers' Institute in Escondido: For six gallons of wheat use 1 oz. of strychnine; 1½ ozs. cyanide of potash, thoroughly pulverized; nine eggs thoroughly beaten, six cups sugar, one-half cup water; mix eggs and sugar with strychnine and cyanide of potash. Pour over wheat and thoroughly mix same. Place in a vessel for a few days to dry. Put a few drops of oil of rhodium in wheat. Mr. Dixon says that all who have tried the above mixture have found it very effectual in destroying both squirrels and gophers.

San Mateo.

CLOSING SALE.—Advocate, June 8: Wm. Corblitt's once famous San Mateo stock farm virtually passed out of existence last Thursday at the sale of stock held at San Mateo. The entire stock of eighty-five head of thoroughbreds were disposed of at an average price of \$80. The famous Guy Wilkes Nutwood stallion Prince Airlie was bought in for \$280 by T. Williams, who will ship him to South Africa. Sheriff Rush of Solano county was the principal buyer. A number of the fine brood mares were bid in by Redwood City and San Mateo people. The sale realized nearly \$7000.

Santa Barbara.

LEMONS.—Press, June 9: Lemon shipments are beginning to go forward more rapidly. The market is more encouraging and the opening of the season is much better than the close of the last.

THE HEAT.—The recent hot weather has proven disastrous to the little vegetation that had previously escaped the effects of the drouth. In Carpinteria beans that had not started when the last rain came, or were planted since, have been wilted down, and will probably never mature. Some earlier sown beans may make a partial crop. The corn felt the withering heat seriously.

Santa Clara.

VIRUS PROMISING.—Mercury, June 8: Horticultural Commissioner Ehrhorn reports that further experiments with the Pasteur virus on gophers and squirrels encourage the belief that it will prove to be a first-class exterminator of those field and orchard pests.

Solano.

A GRAIN FIRE.—Suisun Republican, June 10: Shortly after a north-bound freight train had passed by the ranch rented by W. T. Murphy, four miles northeast of Suisun, last Friday afternoon, the grain was discovered to be on fire. The blaze soon gained headway and the neighbors from the surrounding country hastily arrived on the spot and their strenuous exertions prevented what would otherwise have resulted in an immense loss. A force of section men who were working about two miles farther up the road also responded and did valuable service in checking the conflagration. Mr. Murphy lost about 150 acres of wheat, which, it is estimated, would yield about 1800 sacks. The fire spread to Jas. McCoy's ranch and he lost about thirty-five acres of barley and as many acres of pasture, also about a quarter of a mile of fencing. In both cases there was no insurance.

Sonoma.

PEACH PRICES.—Santa Rosa Republican, June 9: Manager Seegan of the Fontana cannery at Healdsburg inspected Sebastopol peach orchards Tuesday and offered \$55 a ton for Cling peaches. His tempting offer met with few takers. Freestones are not so high; the reported offer is \$25 a ton. No sales of blackberries are yet reported. Pears will probably center around \$30 a ton.

OLIVE OIL.—Capt. Grosse's new olive oil can now be had at the various stores. By his process of filtering it keeps much longer than when made by the old method. It takes a little longer to get the oil ready for market, but it is simply delicious.

Tulare.

BERRIES AND PICKLES.—Register, June 10: The blackberry crop will be short this year, a Tulare berry grower says, as blossoms blasted from some unknown cause. There will be but few wild berries, either, if reports of Chinamen may be relied upon. The pickle market is booming, prices on the cucumber variety having nearly doubled within the past few days. It is not claimed that either the blockade or necessity for raising revenue has anything to do with this, but the crop is short, and—well, somebody has the power to run up prices.

RECLAIMED LAKE LANDS.—Times, June 9: Tulare lake is drying up. Its waters are constantly receding. Like the dawning of a new creation, pleasant groves and fertile fields take the place of its former waste of waters. Some of the changes that take place remind us of the story of enchantment. In the year 1872 the place now occupied by William Thayer's ranch was covered with the black alkaline waves of the lake. A desolation as great as that of any part of the ocean brooded over it. How great the change in twenty-six years! Instead of water, a broad field of alfalfa, with a beautiful grove of cottonwood and willows near its center; an orchard, barns, outhouses and numerous horses and cattle complete the picture. The lake is not in sight. Its shore line is six miles to the west. Is there anything in fiction to equal this? It is not a poor, sandy beach that is recovered as the shore line recedes. It is the best of land, capable of raising a crop of corn or alfalfa the first year. William Thayer's is only one of the many valuable ranches that have been given by the water to the land in recent years. When the first white settlers came to the Tulare valley the lake was sixty miles long. It is now about fourteen miles long. We do not know the cause, but we do know that the lake is shrivelling, sinking and effacing itself from the map.

SQUIRREL TAIL DAY.—Visalia Times: A short time ago the supervisors of Tulare county passed an order offering 2 cents' bounty on each squirrel scalp captured in the county and, for some reason or another, designated that the scalp should be the tail. At the appointed time four men were employed to count the tails outside under the trees. It will require a week perhaps to finish this work. Several lots of over 5000 tails were brought in while others ranged below that figure to a couple of dozen or so. It is estimated that fully 150,000 tails have been reported. It is believed that each squirrel will in one season eat and destroy \$1.50 worth of grain and vegetation in the county. If this is a safe estimate then the squirrels the county will pay for this month alone are worth, dead, fully \$225,000. The bounty at that rate is a big success. That number of tails will cost the county over \$3000.

Yuba.

INCUBATING PHEASANTS.—Four Corners, June 10: Mrs. Henry Haile is making a success of raising Japanese pheasants. She incubated six eggs last season and succeeded in raising a pair of pheasants. This season the female bird has laid over a dozen eggs. When these birds are hatched, Mrs. Haile expects to raise at least half of the chicks.

THE CREAMERY.—Our creamery is now separating about 3000 pounds of milk daily. Dairyman Reghetti moved his milk cows to pasture on the Oakley ranch and expects, with the improved feed, to increase daily his offering of milk. Since unloading his stock here twenty-two days ago, his weights have increased from 650 to 1100 pounds. Last month the creamery separated 75,000 pounds of milk, and it is expected that this month will show an increase of fully 25 per cent. This statement means that the creamery is now making money. It will earn sufficient this summer and fall to tide over a duller season of the winter months made almost certain by the present unusual demand for hay and pasture. On the 25th of this month the annual election of officers will be held in the town hall.

ARIZONA.

HAY AT TUCSON.—Citizen, June 9: Hay is selling at \$12 per ton on board the cars in Tucson. Such a price at this season of the year is unprecedented. All available hay is said to have been bought by California traders and home markets will be obliged to rely on the midsummer crop. This will be put in to a larger extent than ever before. Higher prices are still looked for. In the Salt River valley hay is worth \$4 per ton as it stands on the ground uncut.

ANOTHER lot of amateur farmers! The Ohio Legislature thinks of expending \$70,000 for the purchase of a farm and the erection of buildings for the establishment of an imbecile colony. This is the same old idea that anything will do to farm. Why doesn't the Legislature build a State house for these unfortunates to manage?

THE HOME CIRCLE.

The Cuban Patriot's Prayer.

O, Lord, our God! in thine eternal mercy,
Hear Thou our prayer for our beloved land!
Richest and fairest of the isles of ocean,
Bleeding and starving 'neath the oppressor's
hand,
Hear us! we pray, before thine altar
kneeling,
Almighty God! stretch forth Thy power-
ful hand,
O! not in vain for help to Thee appealing,
Give to us freedom—give us our father-
land.

"Cuba Libre!" we plead with freedom's chil-
dren,
The wide world o'er, to make our cause their
own;
Give us to hear the cry of answering legions,
Let us not sink in desperate fight alone!
Hear us, we pray, etc.

Grant that our cause, O God! through Thee
shall prosper,
Our fields aglow with old-time plenty be,
Give us sweet peace, after the conflict's rag-
ing,
Redeem the land which gives itself to Thee!
Hear us, we pray, etc.

—C. W. Wendte.

The Squire's Opinion.

By RUTH CADY.

When Jotham Harris, at the marriage altar, declared to the meek little woman at his side, "With all my worldly goods I thee endow," he must have included his opinions among his worldly possessions, for he endowed her with these so effectually that she never had any of her own. Jotham's opinions were the only kind used in the house. She once explained to an acquaintance that no one could ever convince Jotham by argument, because he was so thoroughly convinced to begin with, that he never would listen to any argument on the other side. But the remark was merely the statement of a doctrine, and not the result of experiment. She had never argued. The only time she failed to yield to his views was in her last illness, when he thought—for he really loved her—that she ought to recover. Then she seemed unable to bring her acquiescence to a practical basis, and died with a look of wonder in her blue eyes that she should be doing it when he didn't want her to.

Yet Jotham Harris was never intentionally a tyrannical man. He had kindly impulses, a warm heart—when approached from the right side—and was as nearly just as his strong prejudices would allow. His fellow men liked him, quarrelled with him, went to him in need, berated his obstinacy, and elected him justice of the peace—that being an office where, if he would not listen to argument, a change of venue was possible. Perhaps the reign of the gentle little woman who was content with ready-made views had not been the best for his development. At any rate, there was a complete change of dynasty when Mrs. Maria Alden became Mrs. Harris. She had opinions of her own, and had been accustomed to acting upon them for years. Self-reliance and capability were written all over her face, and when she took control of the house that for two years had passed from one slack hand to another, order began at once to evolve from confusion, the tangles straightened as if by magic, and Squire Harris congratulated himself on having a home once more. His satisfaction was good to see, and his wife enjoyed it; but one small household was not enough to exhaust her store of energy, even if her heart and conscience could have been penned within such narrow limits.

She had a healthful feeling of fellowship with the world at large; its needs and its doings interested her, and in the smaller world of her own community she had been a useful member. Active in church and mission work always, she saw no reason to be otherwise now, but it was just along this familiar line that she suddenly discovered a barrier.

"The Squire, he don't believe in missions," volunteered the small maid of the kitchen, with rural freedom of speech, when she found mistress making plans for the meeting of the "circle." "He says there's 'nough poor

right near home 'thout foolin' away money on the heathens and missionaries."

"Does he? Then it's because he hasn't happened to learn much about 'em," replied the mistress, going calmly on with her preparations.

But, despite her outward composure, she was slightly startled. She recalled certain stories of Mr. Harris' peculiarities, which she had heard long before—heard and forgotten as of no moment to herself—but which now assumed a personal significance. For a moment the keen eyes sparkled with unwonted fire; then as a glance through the window showed the Squire wandering delightedly around his new barn, she laughed comfortably.

"Poor dear soul, that's all he knows about it!" she whispered.

She was resting from her labors and surveying the cozy parlor, when he came in and sat down beside her to expatiate once more on the beauties and conveniences of the new barn.

"I had the last load of hay put in the new loft, and when the lower part is all divided off and finished, it will be one of the best in the country," he said. Then his eyes followed hers in their tour of the room. "It all looks nice and pleasant here, Maria. Been house-cleanin' or anything?"

"Only sweepin' and freshenin' up a little for the mission circle. It meets with me tomorrow."

"Meets here? I—why—Maria, do you believe in missions and such stuff?"

"Of course I do."

"Well, I don't, and, more than that, I've no use for 'em. I'm surprised that a sensible woman like you should be taken in that way. What's the use of wastin' on the heathen in foreign countries what is needed by folks at our very doors?"

"They're not all in foreign countries," interposed Mrs. Harris; but he did not hear her, he was too intent on hearing himself.

"I'm ready and willing to help the poor around us; everybody knows that. But I don't believe in missions, and I never will. They know better than to come to me for anything of that sort." The Squire was sitting very stiff and erect in his chair, and piling up his words as if they were fortifications. By the time he had uttered the last sentence he felt sufficiently entrenched to add: "And, about the circle, Maria, I'm sorry you didn't know it before, but I really can't countenance havin' it here."

"Oh, well, you needn't. You couldn't, anyway, for it's just a women's society, and you wouldn't be admitted," laughed Mrs. Maria easily. "Your countenance would scare 'em so not a woman would speak a word aloud. Besides, you will not be home tomorrow; you know you're goin' to drive over to Ripley."

It was such a remarkable speech to be addressed to him, and under such circumstances, that the Squire for a moment doubted his wife's sanity. He rose from his seat and stared at her, first through his spectacles, and then over them.

"Maria," he said solemnly, "I do not think you understand me. I'm opposed to this thing—opposed to it, and I don't want no—such—meetin' held—in my house."

He felt that his dictum was delivered at last, and delivered effectively, but Mrs. Harris only leaned back in her chair and looked up at him good-naturedly.

"Well, there, Squire, don't get so excited over it. If you don't want no such meetin' in this house, you sha'n't have any here, and that's all there's about it; but you don't need to get so worked up over it, and bring on one of your neuralgia headaches. Dear me! if missions worked on me like that, I wouldn't feel I could have much to do with 'em either. There! you ought to take better care of your health, and not let things worry you so."

The Squire walked out of doors again. He had asserted his authority and carried his point without any trouble, but he had an uncomfortable feeling that he had been treated like a baby that must be humored to stop its crying—"for fear I'd yell myself into a colic,"

he muttered disgustedly. He looked back at the house again. How orderly and well managed it was! It did seem as if Maria ought to have a right to ask what company she liked. He almost wished—if he hadn't been for his principles—that he had said nothing. As for Mrs. Harris, her smile vanished with her husband and she looked troubled. But she had a large stock of practical philosophy and healthful common sense and it was only a few minutes before she was murmuring to herself in much the same soothing tone that she had used to the Squire:

"There! 'tisn't anything to fret over. If he has some obstinate streaks, he has no end of good ones, too, and I guess, as the Lord looks at us, we're none of us clear timber; we all have our knots. Anyway, 'tain't no use to ride rough-shod over folks' prejudices; that makes trouble but don't convince anybody. There's always a way 'round."

"The way 'round," in this particular case, however, did not very clearly appear, and she was still puzzling over it in the afternoon when she went out to the barn for possible hens' nests. Then her brow suddenly cleared, and her cheery, bubbling laugh came once more. She forgot the errand that had brought her, and sat down in the wide doorway to perfect her plans. It struck her as a particular good joke that the new barn was built with the money she had brought to the place. "I wouldn't remind him of it for the world, but he'll be sure to remind himself," she thought. When the Squire rode away the next morning she watched his departure with the pleasantest farewells, but the moment he was out of sight she went vigorously to work.

The day proved one of disappointment to Squire Jotham. The man whom he wanted to see was out of town, the horse he had talked of buying had been sold the day before, and he seemed to have taken his journey for nothing. He wished his wife were with him, that they might have gone to visit friends in the next town; but he did not care to go alone, and so turned his horse's head homeward. No one was expecting his return so early, no one noticed his arrival, and putting up the horse, he walked towards the house by the circuitous route of the new barn, whose back doors stood invitingly open. There was a fair prospect of sloping meadow and distant hills from that doorway, but the Squire forgot his favorite view outward in his surprise at the appearance of the interior. The large room and been swept and made clean, rugs were thrown down here and there, a small table holding a vase of flowers and a few books stood at one side, while a quilt mounted upon frames, with chairs placed suggestively near it, occupied the space in the center.

For a moment the bewildered man gazed about him, utterly unable to comprehend this new departure. Had Maria decided to move into the barn? Then, like a flash, came the memory of the mission circle, and he understood it all. It was one of the rare periods when he was taken unawares, with no opinion formulated. He did not know what to think of such proceedings, and, indeed, he had no time to find out what he thought for the sound of approaching steps startled him. He did not want to be found there, and yielding to an unreasoning impulse, he hastily turned towards the ladder, which chanced to be nearer than the door, and climbed into the loft.

"Alas for him! It was the mission circle which was assembling, and his retreat was cut off. He couldn't think of descending among all those women—he wouldn't for anything have Maria know he was there, were his first confused thoughts, and in those few minutes of indecision vanished his last chance of escaping with anything like dignity. "Maybe I can spend the time in a nap," he thought, softly settling back in the hay. But he was never more wide awake in his life. He heard the ladies congratulating his wife on thinking of such a novel, airy place for their gathering—"just the place to put up a quilt"—and heard her pleas-

ant answer, that she thought it would be a convenient place for quilting, and "a nice way to dedicate the new barn before it was used for anything else." He felt a throb of pride in her ingenuity and loyalty, but he was not in the least proud of himself. It was humiliating to be playing the eavesdropper in that fashion. A few verses of Scripture were read, a hymn sung, and an earnest, low-voiced prayer followed, only a few words of which reached the unseen listener—a fact for which he was thankful, since it made him feel a little less guilty. Then most of the party took their places at the quilt, while one of the number read aloud.

The subject was "The Mormons," and it was one which the Squire supposed he knew something about, but it gradually dawned upon him that he had known very little, if the statements this reader made were correct, and she seemed to have gained them from people on the ground. The ladies, from their comments, were familiar with the situation, but the hearer in the loft grew indignant. Anyway, this was something in our country, and a matter which concerned everybody, he assured himself, by way of accounting for his consistency in being interested. But presently he grew so absorbed as to forget that his feelings needed an apology; he even forgot for the time the very peculiar position he was occupying in the "circle," and sat upright that he might not miss a word. The reader was giving the pathetic story told by a dying woman to one of the teachers—the story of a persecuted and blighted girl-bride, a life so wretched, so sorrowful, that she was glad its end had come, only she could not bear to die and leave her little daughter to such a fate as she had known. She begged the teacher to save her child. The mother's anguish, her last pitiful plea, the teacher's promise to take the little girl, though knowing scarcely how to exist herself on the slender, tardily-paid salary, were graphically told, and the recital fell on a hushed room. But when the narrative ended with the statement of how small a sum would provide for the child, and a question whether some kindly heart in our Christian land would not furnish it for the Master's sake, the hush was broken by a voice from some undefined quarter:

"I will."

"Who was that?" chorused the astonished ladies. But only silence answered them, and after a moment the leader hazarded the explanation that it must have been some one calling outside.

The Squire was remarkably thoughtful that evening, but the next morning he dropped a ten-dollar bill into his wife's lap. He had been thinking it over, he said, and there might be something to be said in favor of missions that were not off among the heathens. Anyway, he didn't want to be stingy, and if there was any one—any little child, say—to be supported anywhere he was willing to contribute his share.

Mrs. Harris wisely accepted the gift with quiet thanks and few questions, but she never really knew what had happened until two or three months later, when she was writing a paper for the circle. Her topic was the old, never-answered query, "How to interest the uninterested."

"I can tell you," said the Squire, with a twinkle in his eye. "Just get 'em up in a barn loft, Maria, and hold a meetin' right under 'em when they can't get away. That'll do the business, every time."

"How CAN I get an article in your paper?" asked a correspondent of a Western journal. "It all depends on the article you want to get into our paper," replied the editor. "If the article is small in bulk, like a hair brush or tea caddy, spread the paper out upon the floor, and, placing the article in the center, wrap it up by carefully folding the edges over it and tie it with a string. This will keep the article from slipping out of the paper. If, on the other hand, the article is an English bathtub or a clothes-horse, you would be better not to try it at all."

Brides And Grooms Who Won't Conform.

One would imagine that any bride or groom who was desirous of being married at all would be still more desirous of having the ceremony performed in accordance with the law, and that she or he would be only too willing to conform to whatever requirements the validity of the contract demanded.

Yet it sometimes happens, says an English paper, that one or other of the "high contracting parties" exhibits a stiff-necked obstinacy at the altar, and doggedly refuses to repeat some part of the formula laid down in the marriage service, the omission of which might affect the legality of the union.

Thus, at a Peterborough church the other day, a would-be Benedict insisted on choosing his own phraseology for the declaration of his acceptance of the bride as his wedded wife. In response to the well-known, if fateful, inquiry, he uttered the short, sweet "Yes," evidently under the impression that one term was as good as another for expressing his assent.

In vain was it explained to him that the more active and forcible "I will" was the regulation reply; and so aggressively positive did he ultimately become that his "Yes" was as good as the parson's "I will," that the clergyman closed his book and declined to proceed with the service.

It may have been the intention of this obstinate bridegroom to do his duty by the bride as he asserted; but his failure to appreciate the virtue of the *ipsissima verba* prescribed for the marriage ceremony resulted in the postponement of his wedding until such time as he could be brought to see the wisdom of complying with the requirements of the law.

Sometimes it is the lady who proves recalcitrant at the altar. A short time ago there was a curious scene in a church in a northern town owing to the reluctance of the bride to promise to obey her future lord and master. The latter, it should be stated, was quite willing for the objectionable word to be omitted from the service, but the minister did not feel justified in leaving it out. The curious spectacle was therefore witnessed of the bridegroom joining in his bride's plaintive plea for the promise of obedience to be dispensed with.

Their united eloquence was, however, insufficient to induce the clergyman to take upon himself the responsibility involved in the proposed innovation; and, after an intimation from him that the ceremony could not be completed unless the promise were made in the accustomed terms, the lady finally relented, and pledged herself not only to love and honor, but also to obey. Doubtless the pair lived happily ever after.

In another case, reported from America, the bride not only refused to promise to obey herself, but actually insisted on the bridegroom promising obedience on his part! This was turning the tables with a vengeance; and when, a day or two before that fixed for the wedding, she told her betrothed what she expected him to do, he was so amused at the idea that he laughingly consented to make the promise, little dreaming that she was really in earnest about it or would have the nerve to insist on it before the minister.

In that, however, he found himself quite mistaken, for the unreasonable creature obstinately held out, and the clergyman declaring that he would not marry the couple on such terms even if the bridegroom were willing, as he really was not, the parties left the church and are still in the state of single blessedness.

A few years ago, at a parish church in the Midlands, an amusing scene was caused by a bridegroom, who evidently did not wish to promise more than he intended to perform. When in the exchange of vows between the couple it became necessary for him to repeat, "With all my worldly goods I thee endow," he came to a sudden stop, and, addressing the clergyman, expressed the opinion that in common fairness he

could not be expected "to give her them all."

Striving desperately to keep a straight face, the minister pointed out that the due performance of the wedded ceremony required the utterance by the bridegroom of these words, and that they did not necessarily imply the absolute gift of all his belongings to his bride.

Somewhat mollified by this assurance, the cautious bridegroom allowed himself to be persuaded into giving utterance accordingly, and the marriage was forthwith completed without further question.

It is not often, however, that prospective Benedicts show so much scruple in regard to the pledges they make at this the "happiest moment in their lives."

A True Story.

"Oh, if I were only a man!" exclaimed Rebecca Bates, a girl of fourteen, as she looked from a window of a lighthouse at Scituate, Mass., during the war of 1812, and saw a British warship anchor in the harbor.

"What could you do?" asked Sarah Winsor, a young visitor. "See what a lot of them the boats contain, and look at their guns!" And she pointed to the large boats filled with soldiers in scarlet uniforms, who were coming to burn the vessels in the harbor, and destroy the town.

"I don't care; I'd fight!" said Rebecca. "I'd use father's old shotgun—anything. How still it is in the town! There is not a man to be seen!"

"Oh, they are hiding till the soldiers get nearer. Then we'll hear the shots and the drum."

"The drum!" exclaimed Rebecca. "How can they use it? It is here. Father brought it home last night to mend. See! They are going to burn father's sloop! Where is that drum? I've a mind to go down and beat it."

As flames began to rise from the sloop, the ardor of the girls increased. They found the drum and an old fife, and slipping out of doors unnoticed by Mrs. Bates, soon stood behind a row of sandhills.

"Rub-a-dub-dub! Rub-a-dub-dub!" went the drum, and "Squeak, squeak, squeak!" went the fife.

The Americans in the town thought that help had come from Boston, and rushed into boats to attack the red-coats. The British paused in their work of destruction; and, when the fife began to play "Yankee Doodle," they scrambled into their boats and rowed in haste to the warship, which sailed swiftly away.

Half Pay for Whole Work.

The women teachers in our Boston high schools have sent to the school committee a petition so moderate and so modest that we do not see how it can be refused. What they ask for is, briefly, that their salaries approximate more closely than at present the sums paid to men for similar work.

San Francisco pays its men and women teachers alike. For this our Boston women do not ask. They recognize, they say, that this simple justice is impracticable. Just why it should be so deemed in these days, when working women in almost all legitimate lines are paid the same rates as men for the same work, is not clear. Surely Boston ought to be able to pay as much for her educators as does San Francisco. The law of supply and demand cannot be regarded as settling the matter. If men's salaries were twice as large and women's remuneration only half as much as it is at present, we are inclined to believe that the supply and demand aspect of the case would remain a problem.—Boston Cultivator.

"The man who owns the farm next to a mine is the luckiest fellow I ever saw." "What are you talking about? There's no such thing as luck." "There isn't, hey? Then will you tell me how it happened that he bored for water and struck oil, while I bored for oil and struck water."

Fitting Gloves.

The first trying on of gloves is the crucial test, and should always be done deliberately and in order. The directions, as formulated by one who has given thought to the matter, are: First, shake some powder into each finger of the glove. Then place your elbow firmly on a table, with the hand upright and the thumb extended toward the palm. Draw the body of the glove over the fingers, and, after seeing that each seam of the glove is straight with the line of the finger, coax each finger into the finger of the glove. Be sure, in the meantime, that the stitching on the back of the glove is also straight. Now insert the thumb and look once again to see if the seams are all straight. If not, pull the glove off and begin again. The seam at the tip of the thumb should be in line with the middle of the thumb nail. Smooth the wrist neatly and fasten the second button before the top one, for then the top one will not suddenly burst off.

Mother and Teacher.

Every mother has it in her power to materially lighten the teacher's labors, not by taking a part of the teacher's responsibilities upon her shoulders, but by faithfully meeting her own. The child should receive love and respect for disciplined study at home. We say disciplined because in most schools the teacher encounters far more difficulty from the undisciplined dispositions of her scholars than from any form of stupidity or ignorance. Too often the child is allowed to go to school without any idea of control; it is the mother's duty to make a child obedient first at home. When he is trained to submit to legitimate authority, he will be fit to go to school, but not until then.

Chaff.

"No, I never take the newspapers home; I've a family of grown-up daughters, you know." "Papers too full of crime, eh?" "No, too full of bargains."

Burgin: I see the scientists claim that strawberries are ninety-one per cent water. Ralston: The scientists are away off. Strawberries are ninety-one per cent box bottom.

Papa: Well, did the photographer succeed in making the baby look pleasant? Mamma: No, the baby succeeded in making the photographer look unpleasant.

"I hope, papa," said Bobbie, "that the Government isn't buying its torpedoes of Mr. Spillkins down in the village. I got some there last Fourth of July, and half of them wouldn't go off."

Most of the wealthy farmers of today began under very unfavorable cir-

cumstances. They keep pegging away and practicing economy to a reasonable extent and now they have the apples of their eyes. No man will succeed at farming who does not really love to work in the rich, black dirt and who thinks he ought to be in a courtroom or administering to the sick. A farmer must be a farmer, soul and body; he must have determination in his eye and willingness in his hands.

DOMESTIC ECONOMY.

Domestic Hints.

RYE BREAKFAST ROLLS.—Two cups milk, two cups rye flour, three eggs, pinch of salt, one tablespoonful sugar. Beat the eggs, add milk and sugar. Stir this into the flour, to which the salt has been added. Have the tins warm when the dough is put in.

ALMOND CAKE.—Two cups of sugar, one spoonful butter, two tablespoonfuls ground almonds, two eggs, one cup milk, three cups flour, a pinch of salt, one teaspoon baking powder. Mix the sugar, butter and ground nuts well together, beat in the egg, then add the milk. Sieve the flour, salt and baking powder together and mix in with the other ingredients and bake in a hot oven.

CRUST FOR RAISED PIES.—(This crust may be used for all pies with jelly). Boil lard, good and fine, in water; add as much excellent dripping as there is lard; there must not be much of either. When still hot mix with it as much flour as you have calculated will do for your purpose. Make the paste stiff and smooth by kneading, and also by beating it with a rolling pin. When perfectly smooth put a ball of it in a cloth till cold, then use.

TIDBIT SALAD.—Take a small quantity of cold potatoes, carrots, peas, beans and lentils, or whatever tidbits of vegetables happen to be left over from the previous dinner. Chop all up together, adding a small onion chopped with parsley, a few tablespoons of any ground nuts, a little celery and mustard seed. Season to taste and add French dressing. Garnish with hard-boiled eggs and dices of cold boiled beets. This salad can be simplified by using but one or two vegetables.

PRESSED BEEF.—Buy a rib stew or any of the less expensive cuts of beef. Prepare for boiling and season with salt to taste, three whole cloves and large tablespoonful of vinegar to each four pounds of meat. Boil until thoroughly done. Remove all bones and skin and chop fine, adding pepper to taste. Place in a stone vessel and press with a heavy weight. When quite cold and firm the beef will slice easily. Serve cold, or dip thin slices in beaten egg and bread crumbs and fry in hot lard.

A FAMILY FAILING.

The struggle with Heredity.

The Right Side of the Color Line.

To heredity, to the transmission of traits from sire to son, we owe most of the possibilities of growth and development. If each newly born being started out anew, without the force of heredity the level of life might be expected to be that of the digger Indian or Bushman. Naturally bad traits descend like the good. Peculiarities of feature, eccentricities of speech and manner, birth marks, etc., are handed down just as surely as manual dexterity, physical beauty, mathematical ability, and the mental and moral qualities in general. A curious example of this descent of family traits is furnished by Mrs. Maggie Pickett, Canton, Ga., in whose family gray hair was hereditary. She writes:

"Gray hair is hereditary in our family. As long as I can recollect, my mother's hair has been gray. About twelve years ago, my hair began to show signs of turning. I resolved to try Ayer's Hair Vigor, and after using it only a few times my hair was restored to its natural color. I still use this dressing occasionally, a bottle lasting me quite a while; and though over forty years of age, my hair retains its youthful color and fullness. To all who have faded and gray hair, I would heartily recommend Dr. Ayer's Hair Vigor."—Mrs. MAGGIE PICKETT, Canton, Ga.

There is no shame in gray hair, but there

may be some sadness, because it is untimely, and out of season. Gray hairs are a crown of honor to the aged, but to the young they are a stigma. There is no need to be gray in youth. Grayness comes from a deficiency of the coloring matter which gives the hair its natural tint. This coloring matter can be supplied artificially and is so supplied by Dr. J. C. Ayer's Hair Vigor. It is by supplying the lacking pigment that Dr. Ayer's Hair Vigor restores gray or faded hair to its original color. Beyond this, it makes the hair grow, gives it gloss and softness, stops it from falling, removes dandruff, and cleanses the scalp. Mrs. C. M. Ayres, Mount Airy, Ga., writes:

"About three years ago, my head became full of dandruff, which caused great annoyance; after a time the hair began falling out. The use of Dr. J. C. Ayer's Hair Vigor stopped the hair from falling out, and made the scalp clean and healthy."—Mrs. C. M. AYRES, Mount Airy, Ga.

Dr. Ayer's Hair Vigor is noted as a dressing. It is used every day by thousands whose chief claim to beauty rests on beautiful hair. Send for Dr. Ayer's Curebook, a story of cures told by the cured. Free. Address the J. C. Ayer Co., Lowell, Mass.

S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, June 15, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | July. | Dec. |
|----------------|-----------------|-----------------|
| Wednesday..... | 89 1/4 @ 87 1/4 | 75 1/4 @ 75 |
| Thursday..... | 89 @ 87 1/4 | 75 1/4 @ 74 1/4 |
| Friday..... | 89 @ 87 | 74 1/4 @ 73 1/4 |
| Saturday..... | 88 @ 85 1/4 | 73 1/4 @ 72 1/4 |
| Monday..... | 85 @ 76 1/4 | 69 1/4 @ 71 |
| Tuesday..... | 76 @ 75 | 71 1/4 @ 70 1/4 |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | July. | Dec. |
|----------------|------------|------------|
| Wednesday..... | 88 10/16 d | 68 4 1/2 d |
| Thursday..... | 88 0 d | 68 4 1/2 d |
| Friday..... | 88 1 1/4 d | 68 3 1/2 d |
| Saturday..... | 88 0 d | 68 2 1/2 d |
| Monday..... | 88 7/16 d | 68 0 1/2 d |
| Tuesday..... | 78 9/16 d | 58 1 1/2 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | Dec. | May. |
|----------------|---------------------|-----------------------|
| Thursday..... | \$1 37 1/2 @ 1 35 | \$1 37 1/2 @ 1 37 1/2 |
| Friday..... | 1 35 1/2 @ 1 35 1/2 | — |
| Saturday..... | 1 33 1/2 @ 1 34 1/2 | — |
| Monday..... | 1 31 1/2 @ 1 33 1/2 | — |
| Tuesday..... | 1 33 1/2 @ 1 32 1/2 | 1 36 @ 1 36 1/2 |
| Wednesday..... | 1 34 @ 1 36 | — |

Wheat.

Another week of depression has been experienced in the wheat market, not only here, but in Eastern and foreign centers, with declines in options more pronounced in Chicago and Liverpool than in this center. There was virtually no business here in spot wheat, and consequently nothing beyond speculative values upon which to base quotations for the actual grain. December wheat declined here about 4 1/2 c during the week, while in Chicago there was a break of 10 c per bushel on Monday in spot or cash wheat, the result of the collapse of the Leiter deal, in which it is claimed there was a net loss of \$1,000,000. If the record of previous deals is a criterion, the loss on the final accounting is more apt to prove over than under above figure, when everything in connection with the deal has been closed. In the Liverpool market July wheat declined the equivalent of 18 c per cental and December wheat about 9 c, this great depression being mainly the outcome of the Leiter crash in Chicago. With this deal now a thing of the past, it is likely that for some time to come there will be a steadier and healthier market.

Not much new wheat has yet arrived at tidewater, nor is there likely to be any heavy quantity received the current month. The crop is now practically made, and weather will not cut much of a figure from this time forward. The showers of the past month, and the almost total absence of hot northerly, have enabled growing grain in most localities to mature much better than was thought possible two months ago. Various estimates are being made as to how large or small the crop in this State will prove, but the estimates are all guesswork. It is claimed that the yield will be two-thirds, or a half, or a third, of a crop, in many cases the estimate being influenced by the bias or interests of the party making the same. But estimates like the above are of no special value, as they convey no definite idea. As well say that an object is one-third, or two-thirds, the size of a barn. There is less difference in the sizes of barns than there is in the wheat crops of this State. The exportable surplus of the wheat crop of California has ranged in the past twenty years from 370,000 tons to 1,400,000 tons, the lower figure being of the 1894 crop and the higher figure representing the hatter yield of 1880. From such widely separated extremes the naming of a reasonable average is about impossible. The yield last year was about 900,000 tons, leaving an exportable surplus of close to 600,000 tons. If this year's crop aggregates 600,000 tons, admitting of 300,000 tons for export, it will be fully up to if not ahead of the ideas of those inclined to be conservative. There is virtually nothing doing at present in ships or shipping wheat, but there is apt to be some chartering of wheat vessels in the near future on basis of 25 c @ 20 c per long ton for desirable iron ships to Cork for orders to United Kingdom, Havre, Antwerp or Dunkirk.

California Milling..... \$1 45 @ 1 55
Cal. No. 1 shipping, alongside..... 1 37 1/2 @ 1 42 1/2
Oregon Valley..... 1 37 1/2 @ 1 42 1/2
Walla Walla Blue Stem..... 1 40 @ 1 50
Walla Walla Club..... 1 35 @ 1 40

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 white wheat per cental for the week were as follows for the options named:

December, 1898, delivery, \$1.37 1/2 @ 1.31 1/2.
May, 1899, delivery, \$1.37 1/2 @ 1.36.
Wednesday, at regular noon session of Call Board, December wheat sold at \$1.34 @ 1.36; May 1899, \$— @ —.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|-------------------|-----------------------|
| Liv. quotations..... | 68 1/2 @ 65 1/2 | 88 1/2 @ 88 1/2 |
| Freight rates..... | 18 @ 20 1/2 | 27 1/2 @ 30 1/2 |
| Local market..... | \$1.22 1/2 @ 1.30 | \$1.37 1/2 @ 1.42 1/2 |

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

Flour.

The market for this commodity is fully as weak as previously noted, and there is no prospect at the moment that any strength will be developed for some time to come. Most of the flour now changing hands is selling at less than cost, having been produced

from wheat purchased at prices far above those now obtainable.

| | |
|---------------------------------|--------------|
| Superfine, lower grades..... | 83 75 @ 4 00 |
| Superfine, good to choice..... | 4 00 @ 4 25 |
| Country grades, extras..... | 5 00 @ 5 25 |
| Choice and extra choice..... | 5 25 @ 5 35 |
| Fancy brands, jobbing..... | 5 40 @ 5 60 |
| Oregon, Bakers' extra..... | 5 00 @ 5 25 |
| Walla Walla, Bakers' extra..... | 5 00 @ 5 25 |

Barley.

There has been no brisk trading in the market for this cereal since last review, and absence of strength has been fully as prominent a feature as previously noted. Buyers are operating only as their necessities compel them to, not caring to purchase against future needs. Values are relatively higher than for oats or corn, and whether they can be maintained at existing levels, with no advances in prices of other feed cereals, is somewhat doubtful, unless the crop in this State proves so small that consumers will have to depend mainly on imports from Oregon and Washington. Present supplies in this center are largely from the States above named. It is stated that most of last year's crop which can be spared from Oregon and Washington has been already forwarded. If new crop barley from above points is required here, it need not be looked for much before October. Prices on Call Board showed less fluctuation than during previous week, with the general trend of the speculative market in favor of the buying interest. At close, however, the speculative market showed more firmness.

| | |
|---------------------------------|-----------------|
| Feed, No. 1 to choice..... | 1 17 1/2 @ 1 20 |
| Feed, fair to good..... | 1 15 @ 1 17 1/2 |
| Brewing, No. 1 to choice..... | 1 25 @ 1 35 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

December, 1898, delivery, \$1.14 @ 1.17 1/2.
May, 1899, delivery, \$— @ —.
Wednesday at regular noon session of the Call Board Dec., 1898, feed sold at \$1.16 1/2 @ 1.17 1/2; May, 1899, \$— @ —.

Oats.

This market has developed additional weakness since last issue, which was to have been expected, owing to the generally low and reduced rates prevailing in markets of most other cereals. As is almost invariably the case on a weak and declining market, buyers are holding off as much as possible, having no faith in the development of strength in the immediate future. That prices will drop much from existing levels is not probable, as values now are quite reasonable, especially as compared with prices for barley and corn.

| | |
|-------------------------------|---------------------|
| White Oats, fancy feed..... | 1 35 @ — |
| White, good to choice..... | 1 27 1/2 @ 1 32 1/2 |
| White, poor to fair..... | 1 25 @ — |
| Gray, common to choice..... | 1 27 1/2 @ 1 32 1/2 |
| Milling..... | 1 32 1/2 @ 1 35 |
| Surprise, good to choice..... | 1 35 @ 1 40 |
| Black Russian..... | — @ — |
| Red..... | — @ — |

Corn.

Trade has not been brisk, and where transfers of noteworthy magnitude were effected, it was the exception where concessions were not granted buyers. Stocks and offerings continue to be mainly Eastern product. To the recent liberal importations from Nebraska and Kansas is largely due the existing weakness. Small Yellow proves an exception to the rule, being in light stock and in few hands, and continues to be held at comparatively stiff prices.

| | |
|----------------------------------|-------------|
| Large White, good to choice..... | 1 05 @ 1 10 |
| Large Yellow..... | 1 05 @ 1 10 |
| Small Yellow..... | 1 30 @ 1 35 |
| Eastern Yellow..... | 1 00 @ 1 05 |
| Egyptian White..... | — @ — |
| Popcorn, shelled, 1/2 lb..... | — @ — |

Rye.

Offerings are considerably in excess of immediate demand, causing market to rule against sellers. Lower quotations are noted. Good to choice, new..... 1 25 @ 1 32 1/2

Buckwheat.

The same activity as previously noted is prevailing in the market for this cereal, with offerings and demand both lacking, and quotations necessarily nominal.

| | |
|---------------------|-------------|
| Good to choice..... | 1 75 @ 1 85 |
| Silverskin..... | — @ — |

Beans.

The general features of the market remain practically the same as noted a week ago. There is not much positive inquiry from any quarter, but holders are not as a rule displaying any anxiety. To purchase freely, full current figures would have to be paid, but on selling pressure these prices could not be realized. Horse beans are temporarily out of stock. White varieties, such as Small White, Pea and Lady Washington, constitute a large proportion of present offerings.

| | |
|----------------------------------|-------------|
| Pea, fair to good, 100 lbs..... | 1 85 @ 1 95 |
| Small White, good to choice..... | 1 90 @ 2 00 |
| Lady Washington..... | 1 80 @ 1 90 |
| Butter, small..... | 1 60 @ 1 75 |
| Butter, large..... | 1 75 @ 1 90 |
| Pinks..... | 2 65 @ 2 75 |
| Bayos, good to choice..... | 2 90 @ 3 00 |
| Reds..... | 2 75 @ 3 00 |
| Red Kidneys..... | 2 75 @ — |
| Limas, good to choice..... | 2 65 @ 2 75 |
| Black-eye Beans..... | 3 25 @ 3 35 |
| Horse Beans..... | — @ — |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

The bean market on the Atlantic side is thus outlined by a New York authority, under recent date, the report coming through by mail. Prices quoted are per 60-lb. bushel:

Few weeks this season have been any duller than the one now closing. Jobbing trade has been uncommonly slack, and export orders have run very light, giving no support to the market except for Red Kidney which has secured practically all of the shipping business. Farmers have been so busy with the spring work that they have not given any thought to the marketing of beans, and

the receipts from this State have fallen to a half dozen carloads. Marrow have weakened about 2 1/2 c, and at the close choice stock is offering in a jobbing way at \$1.70; round lots could probably be bought at \$1.67 1/2. Medium are in smaller supply than other varieties and hold up better; the few sales making are \$1.40 @ 1.42 1/2, latter rather extreme. Pea have declined to \$1.35 @ 1.37 1/2; some holders have accepted the inside figure for car lots, but recent jobbing sales have been mainly at \$1.37 1/2. Further lots of Red Kidney have been taken for export and this has sustained the price of choice stock. Scarcely any inquiry for either White Kidney or Turtle Soup and values are somewhat nominal at the moment. Several important sales of Yellow Eye were made early in the week at \$1.50, and the market has since advanced to \$1.55 @ 1.60. Another lot of 1000 bags California Lima has been returned from England; the demand here is very slow at the moment and prices a little easier; quotable \$2 @ 2.05. Green peas have dragged all the week and under some pressure to sell values have gradually declined; some car lots of old stock have been sold below our inside quotations.

Dried Peas.

Arrivals and offerings are light. Values are without quotable change, but market for choice to select is moderately firm.

| | |
|-----------------------------|-------------|
| Green Peas, California..... | 1 90 @ 2 00 |
| Niles Peas..... | 1 65 @ 1 75 |

Wool.

While there is no great activity to record in this center, there is some trading in progress, which, in connection with recent transfers in the interior, enables giving some idea of values. Quotations are appended for spring wools of current season, with prospects of considerable trading in the near future at the range of values noted.

| | |
|------------------------|---------|
| Northern, free..... | 10 @ 12 |
| Southern Mountain..... | 9 @ 11 |

SPRING.

| | |
|--|---------|
| Humboldt and Mendocino..... | 15 @ 17 |
| Northern Sacramento Valley, free..... | 13 @ 15 |
| Northern Sacramento Valley, defective..... | 11 @ 13 |
| San Joaquin foothill, free..... | 12 @ 15 |
| San Joaquin foothill, defective..... | 10 @ 13 |
| San Joaquin plains and southern, 7 mos..... | 9 @ 14 |
| San Joaquin plains and southern, 12 mos..... | 8 @ 12 |
| Nevada, as to condition..... | 12 @ 15 |
| Oregon Eastern, choice..... | 12 @ 14 |
| Oregon Eastern, fair to good..... | 9 @ 11 |

Hops.

The market is featureless, there being no demand worth mentioning, either for shipment or on local account. Existing quotations are based wholly on recent asking rates, transfers at these figures being out of the question, unless in a retail way. In the absence of bids from shippers or jobbers, it is impossible to state just what could be realized at the moment on offerings from first hands.

Good to choice, 1897 crop..... 10 @ 13

Recent advices from New York by mail furnish the following concerning the hop market:

Conditions have not differed very much from last week. Business has continued dull—exceedingly so at times—but with only a little stock arriving from the country, and no special urgency to sell local holdings, the range of values remains as previously given. The limited quantity of stock called for by the brewers has been a surprise to some of the trade, but it must be remembered that the cold, wet weather this spring has been against a full consumption of liquors, and most of the brewers had a good many old hops to work on. There is very general disposition to use up this old stock this season if possible; some of it now has but little merit and will simply grow poorer with age. We can hardly expect export business until we can offer shippers better qualities than are now available. Increasing interest is shown in the growing crop, but it is too early to form any definite conclusions to the probable yield. Reports as to the present condition are conflicting, but this is generally so at this season of year.

Hay and Straw.

More steadiness has been manifested in the market for hay since last review than at any previous date since new crop began to come forward. Receipts for the week included some from Oregon, Washington, Utah and Nevada, but consignments from these outside sections are on the decrease. Straw was in only light request, with prospects of materially lower prices soon ruling.

NEW HAY.

| | |
|--------------|---------------|
| Wheat..... | 17 00 @ 20 00 |
| Barley..... | 15 00 @ 16 00 |
| Oat..... | 15 00 @ 16 00 |
| Alfalfa..... | 12 00 @ 13 00 |

OLD HAY.

| | |
|----------------------|---------------|
| Wheat..... | 19 00 @ 22 50 |
| Wheat and Oat..... | 18 00 @ 21 00 |
| Oat..... | 17 00 @ 19 00 |
| Barley..... | — @ — |
| Timothy..... | 15 00 @ 18 00 |
| Compressed..... | 19 00 @ 23 00 |
| Straw, 1/2 bale..... | 65 @ 90 |

Millstuffs.

Bran and middlings were offered less freely than for some weeks preceding, and tendency was to firmer figures. Market for other millstuffs quoted herewith inclined in favor of buyers.

| | |
|---------------------|---------------|
| Bran, 1/2 ton..... | 16 00 @ 17 50 |
| Middlings..... | 17 50 @ 20 00 |
| Barley, Rolled..... | 26 00 @ 26 50 |
| Cornmeal..... | 24 00 @ 24 50 |
| Cracked Corn..... | 25 00 @ 25 50 |

Seeds.

Market is lightly stocked with Mustard seed, and tolerably stiff prices for the same are now current. A shipment of 25,000 pounds went forward per last Panama steamer for New York. Flaxseed is offered very sparingly. Bird seed is in light request at former range of values.

| | |
|----------------------------|---------------|
| Mustard, Yellow..... | 4 00 @ 4 25 |
| Mustard, Trieste Seed..... | 4 25 @ 4 50 |
| Mustard, Wild Brown..... | 3 00 @ 3 25 |
| Flax..... | 2 25 @ 2 40 |
| Canary..... | 2 1/2 @ 2 3/4 |
| Rape..... | 2 1/2 @ 2 3/4 |
| Hemp..... | 2 1/2 @ 2 3/4 |
| Alfalfa, Utah..... | — @ — |

Bags and Bagging.

A moderate inquiry is being experienced for Grain bags, but supplies are proving more

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than ample for requirements, and market remains fully as favorable to buyers as previously noted. In other descriptions of hags and bagging there is nothing of consequence doing, values remaining nominally as before.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, 22x36, spot..... | 5 @ 5 1/2 |
| State Prison bags, per 100..... | 4 85 @ — |
| Wool sacks, 4 lb..... | 30 @ — |
| Wool sacks, 3 1/2 lb..... | 27 @ — |
| Gunnies..... | 9 1/4 @ 10 |
| Bean bags..... | 4 1/2 @ 4 1/2 |
| Fruit sacks, cotton..... | 5 1/2 @ 6 |

Hides, Pelts and Tallow.

Hides and tallow are higher. Pelts are ruling steady. In speaking of the hide market, W. B. Sumner & Co. say:

The handler of hides, the tanner and the leather dealer are much concerned at this time as to the effect which the war will have on the prices of hides and leather. The Civil War gave no experience which can be relied upon in this instance, and the Franco-German and Russo-Turkish wars made really no impression on the general leather markets. At the present time an army of 200,000 men is being equipped; and, although the Government one year ago was possessed of liberal supplies for our small army establishment, it now comes into the market as a cash buyer of shoes and leather for equipments. The leather for shoes will be of the cheaper grades of hemlock sole and of wax sides, which will pass for calf. These purchases will, as a rule, be effected in the East; but we are having, and shall have, a very liberal demand for harness and skirting leather. In all probability, the present war will not be of short duration, and the possessions which we may acquire in the Caribbean sea or in Polynesia will be retained, and such possessions will make it necessary to supply a large army and navy. The importation of hides from foreign ports to New York and Boston amounts to over 2,000,000 hides per annum, and any curtailment of these shipments, especially from the River Plate, will cause the American tanner to rely more on the domestic supply for his hides. It looks as though the present high values on hides had come to stay, for a time at least.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

| | Sound. | Culls. |
|-------------------------------------|-----------------|----------------|
| Heavy Steers, over 56 lbs..... | 10 1/2 @ 11 | 9 1/2 @ 10 |
| Medium Steers, 48 to 56 lbs..... | 9 1/2 @ 10 | 8 1/2 @ 9 |
| Light Steers, under 48 lbs..... | 9 @ 9 1/2 | 8 @ 8 1/2 |
| Heavy Cow Hides, over 50 lbs..... | 9 @ 9 1/2 | 8 @ 8 1/2 |
| Light Cow Hides, under 50 lbs..... | 9 @ 9 1/2 | 8 @ 8 1/2 |
| Wet Salted Kip..... | 9 @ — | 8 @ — |
| Wet Salted Veal..... | 9 1/2 @ — | 8 1/2 @ — |
| Wet Salted Calf..... | 10 @ — | 9 @ — |
| Dry Hides..... | 10 1/2 @ 11 1/2 | 9 1/2 @ 10 1/2 |
| Dry Kip and Veal, 11 to 16 lbs..... | 16 @ — | 13 @ 14 |
| Dry Calf, under 4 lbs..... | 18 @ 20 | 16 @ 17 |
| Dry Horse Hides, large..... | 2 00 @ — | — @ — |
| Dry Horse Hides, small..... | 1 @ 00 | — @ 00 |
| Dry Colts' Hides..... | — @ 50 | — @ 50 |
| Pelts, long wool, per skin..... | 90 @ 1 25 | — @ — |
| Pelts, medium, per skin..... | 70 @ 90 | — @ — |
| Pelts, short wool, per skin..... | 35 @ 60 | — @ — |
| Pelts, shearing, per skin..... | 20 @ 30 | — @ — |
| Deer Skins, best summer..... | 27 1/2 @ 30 | — @ — |
| Deer Skins, good medium..... | 20 @ 22 1/2 | — @ — |
| Deer Skins, thin winter..... | — @ 10 | — @ 10 |
| Elk Hides..... | 10 @ 12 | — @ — |
| Tallow, good quality..... | 3 1/2 @ 3 1/2 | — @ — |
| Tallow, No. 2..... | 3 1/4 @ 3 1/4 | — @ — |
| Goat Skins, perfect..... | 30 @ 37 1/2 | — @ — |
| Goat Skins, damaged..... | 10 @ 20 | — @ — |
| Kid Skins..... | 5 @ 10 | — @ — |

Honey.

Stocks of all descriptions are light, but more especially is Extracted in slim supply. The current crop bids fair to prove one of the lightest on record since bee culture in this State has been a noteworthy industry. There will be a moderate yield in San Diego county, where some of the best honey in the State is grown. Values remain without quotable change, market being firm for best qualities.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 5 1/2 @ 6 |
| Extracted, Light Amber..... | 4 1/2 @ 5 1/2 |
| White Comb, 1-lb frames..... | 8 1/2 @ 10 |
| Amber Comb..... | 6 1/2 @ 7 1/2 |

Beeswax.

There are no large quantities in store in this center, but, with very limited demand, the market lacks firmness.

Fair to choice, 1/2 lb..... 23 @ 25

Live Stock and Meats.

Market for Beef continues moderately firm, especially for No. 1 to choice, with quotable rates unchanged. Mutton is in fair request, commanding tolerably steady values. Hogs remained in light receipt and all desirable offerings brought decidedly stiff prices. It is likely, however, that values are now near zenith, being too high for packers and are at a point where dressed stock in refrigerator cars can be laid down here profitably from the East.

| | |
|---|---------------|
| Beef, 1st quality, dressed, net 1/2 lb..... | 6 @ 6 1/2 |
| Beef, 2d quality..... | 5 @ 5 1/2 |
| Beef, 3d quality..... | 4 @ 5 |
| Mutton—ewes, 7 @ 7 1/2 c; wethers..... | 7 1/2 @ 8 |
| Hogs, hard grain fed, medium..... | 5 @ — |
| Hogs, small..... | 4 1/2 @ 5 |
| Hogs, large hard..... | 4 1/2 @ 4 1/2 |
| Hogs, feeders..... | 4 @ — |
| Hogs, country dressed..... | 5 1/2 @ 5 1/2 |
| Veal, small, 1/2 lb..... | 6 @ 7 1/2 |

Veal, large, # lb..... 5 @ 6
Lamb, Spring, # lb..... 8 @—

Poultry.

There has been no opportunity for the development of firmness in the poultry market during the week under review. Three cars of Eastern poultry were landed here, and these, in connection with moderate supplies of domestic, gave retailers more than they required for the time being. Large Eastern Hens went at \$5.50@6.00. In the market for the local product there was a lack of strength throughout, with demand slow.

Turkeys, live hens, # lb..... 10 @ 11
Turkeys, live gobblers..... 10 @ 11
Hens, Cal., # doz..... 3 00@4 50
Roosters, old..... 3 50@4 00
Roosters, young, (full-grown)..... 6 00@7 50
Fryers..... 4 00@5 00
Broilers, large..... 3 50@4 00
Broilers, small..... 2 00@3 00
Ducks, young, # doz..... 3 00@4 50
Ducks, old..... 3 00@3 25
Geese, # pair..... 7 50@10 00
Goslings, # pair..... 1 00@1 25
Pigeons, Old, # doz..... 1 00@1 25
Pigeons, Young..... 1 25@1 50

Butter.

This market has developed no better tone since last issue. Much of the butter now coming forward is showing the effects of mid-summer weather and dry feed, causing a surplus of defective stock. To make matters worse for this class of goods, considerable low-grade and cheap Eastern butter is now being landed here. Strictly choice to fancy fresh is not in heavy supply and values for this description are being fairly well maintained.

Creamery extras, # lb..... 19 @—
Creamery firsts..... 18 @18½
Creamery seconds..... 17 @17½
Dairy select..... 17 @17½
Dairy seconds..... 15 @16
Dairy, soft and weedy..... 1 @—
Mixed store..... 14 @15
Creamery in tubs..... 18½@20
Firkin, Cal., choice to select..... 18 @20
Firkin, common to fair..... 15 @17

Cheese.

Market is tolerably well stocked for the time being, and with no brisk wholesale demand, buyers are able to operate to fully as good advantage as for several weeks past. It is a question of only a short time, however, when there will be a firmer tone.

California fancy flat, new..... 9 @ 9½
California, good to choice..... 8 @ 9
California, fair to good..... 7½ @ 8
California Cheddar..... 9 @11
California, "Young Americas"..... 9 @11

Eggs.

Prices for choice to select have been again marked up, but the advanced rates were not very well sustained, the higher figures being more the result of manipulation than of positive strength in the market. Five or six carloads of Eastern eggs were landed here within the week, and in the attempt to establish a profitable market for this imported stock, quotable values for choice to select domestic were advanced. Where offerings of home product showed defects, they could not be placed at as good figures as preceding week.

California, select, large white and fresh..... 18 @—
California, select, irregular color & size..... 16 @17
California, good to choice store..... 14 @15
Eastern, as to section and grading..... 14 @16

Vegetables.

While prices for most kinds of vegetables now in season kept close to figures last quoted, the market as whole presented a weaker tone. Changes in quotations were almost without exception to lower rates. Asparagus, Beans, Cucumbers and Tomatoes sold at a decline. Red Onions during the greater part of the time were plentiful and cheap. New Yellow are beginning to arrive.

Asparagus, No. 1 to choice, # box..... 1 50@2 00
Asparagus, common to fair, # box..... 50 @ 1
Beans, String, # lb..... 3 @ 5
Beans, Lima, # lb..... 3 @ 5
Beans, Refugee, # lb..... 3 @ 5
Beans, Wax, # lb..... 3 @ 5
Cabbage, choice garden, # 100..... 60 @ 70
Cauliflower, # doz..... 50 @ 60
Corn, Green, # doz..... 20 @ 25
Corn, Alameda, # crate..... 40 @ 65
Cucumbers, # box..... 40 @ 65
Egg Plant, # lb..... 4 @ 5
Garlic, # lb..... 4 @ 5
Mushrooms, Buttons, # lb..... 4 @ 5
Mushrooms, Wild, # lb..... 4 @ 5
Okra, Dried, # lb..... 3 @ 4
Onions, Yellow, good to choice..... 75 @ 90
Onions, New Red..... 50 @ 65
Peas, Sweet, Garden, # lb..... 1½ @ 2½
Peas, Sweet, # sack..... 1 00 @ 1 25
Peppers, Green Chile, # lb..... 8 @ 10
Rhubarb, ordinary, # box..... 50 @ 60
Rhubarb, Mammoth, # bx..... 75 @ 90
Squash, Summer, # small box..... 75 @ 90
Tomatoes, # box or crate..... 1 25 @ 1 50

Potatoes.

Old potatoes are still arriving in moderate quantity, mainly from Oregon, and market is devoid of firmness, the demand for the same being now very light. New potatoes were not in quite such heavy receipt on preceding week, but there were enough for requirements. Very few new have been thus far received which were sufficiently ripe to be suitable for shipment to distant points.

Burbanks, River, # sack..... 40 @ 65
Burbanks, Petaluma and Tomales, # ct..... 40 @ 70
Burbanks, Humboldt, # ct..... 40 @ 70
Burbanks, Oregon, # cental..... 40 @ 70
Garner Chile, Oregon..... 60 @ 90
New Potatoes, in sacks, # cental..... 55 @ 75
New Potatoes, River, in boxes, # cental..... 55 @ 75
Sweet River, # cental..... 55 @ 75
Sweet Merced..... 55 @ 75

The Fruit Market.**Fresh Fruits.**

There are fair supplies on market of the various kinds of fresh fruit now in season, but entirely too large a proportion is of inferior quality for a healthy and satisfactory state of affairs to exist. Not only are rejections from

Eastern shipments sent to this market, but San Francisco is made the dumping ground of much trashy fruit which is hardly marketable at any figure and considerable of it is unfit for human food. Consumers dependent on this market have as high an appreciation of choice to select fruit as any class of buyers in any other center. Inferior and trashy stock, however, can never be placed to advantage, but on the other hand, tends to depreciate values for more desirable qualities by driving some special trade wholly from certain lines. There has been no glut of choice to select fruit of any variety, but some sorts were in better favor with the trade than others. Apricots were in good request and promise to continue so throughout the season. Cherries had to depend mainly on the retail trade for a market, receiving little or no call from canners. Plums did not as a rule sell very readily or command stiff prices, as is generally the case at this date with the earlier varieties. Berries of most sorts sold fairly well. Strawberries brought very good prices, as compared with values in most previous seasons.

Apricots, Pringle, # box..... — @ —
Apricots, Royal, # box..... 40 @ 70
Apples, green, # small box..... 30 @ 50
Cherries, Royal Anne, # box..... 40 @ 60
Cherries Black, in bulk, # lb..... 1½ @ 3
Cherries White, in bulk, # lb..... 1½ @ 2½
Cherries, Black, fair to choice, # box..... 25 @ 35
Cherries, White and Red, # box..... 25 @ 35
Blackberries, # crate..... 65 @ 75
Raspberries, # chest..... 5 00 @ 8 00
Raspberries, # crate..... 85 @ 1 00
Gooseberries, # lb..... 1 @ 2
Gooseberries, English, # lb..... 3½ @ 4
Strawberries, Longworth, # chest..... 6 00 @ 9 00
Strawberries, Large, # chest..... 3 00 @ 4 00
Peaches, Early Freestone, # box..... 40 @ 75
Plums, Clyman, # box..... 30 @ 50
Plums, Cherry, # drawer..... 20 @ 35

Dried Fruits.

Business is ruling very quiet in the market for cured and evaporated fruits, as is ordinarily the case at this time of year, the old season being about ended and the new one not yet begun. New apricots are expected on market, however, before the close of the present month. It is generally conceded that the output of cured Apricots will be light this year, and that the fruit will average small in size, as the large ones are being sought after by canners at \$35@40 per ton. Peaches are in fair request for canning, but inquiry is mostly for choice to fancy Clings at \$50@60 per ton, while on best Freestones the bids are \$35@40 per ton. No fears are entertained of there being any special shortage in the supply of Peaches of this season's curing. Pears and Plums are likely to be dried in fully as large quantity as last year. Both kinds are now nearly out of stock. There is nothing very definite yet as to how heavy the coming Prune crop will prove, but present indications are that it will be about 75 per cent that of the 1897 yield, new trees coming into bearing helping to decrease the shortage. Stocks of tree fruit now on market are principally Prunes and Peaches. It is estimated there are about seventy-five carloads of each of these two kinds still remaining unplaced. Both are offering at unchanged rates.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, per lb..... 6½ @ 8
Apricots, Royal, fancy..... 8½ @ 9
Apricots, Moorpark..... 9 @ 11
Apples, in boxes..... 6½ @ 7
Figs, fancy pressed..... 8 @ 10
Nectarines, White..... 4½ @ 5
Nectarines, Red..... 3½ @ 4
Peaches, unpeeled, choice..... 4½ @ 5
Peaches, unpeeled, fancy..... 6 @ 8½
Peaches, peeled, in boxes..... 10 @ 12½
Pears, unpeeled Bartlett, halved, fancy..... — @ —
Pears, halved, unpeeled Bartlett..... — @ —
Pears, quartered, unpeeled Bartlett..... 4 @ 5
Pears, peeled and sliced..... — @ —
Plums, pitted..... 5 @ 6
Prunes, in sacks, 40—50's..... 5½ @ 6
50—60's..... 4½ @ 4½
60—70's..... 3½ @ 3½
70—80's..... 3 @ 3½
80—90's..... 2½ @ 3
90—100's..... 2½ @ 3
Above figures are on basis of 3½ @ 3½ for 4 sizes. Prunes in boxes, ¼¢ higher for 25-lb boxes, ½¢ higher for 50-lb boxes.
4 sizes Santa Claras and equal..... 3½ @ —
4 sizes San Joaquin and Northern..... 3 @ —
Prunes, Silver..... 4 @ 7

COMMON SUN-DRIED.

Apricots, ordinary..... 5 @ 6
Apples, sliced..... 4 @ 4½
Apples, quartered..... 4½ @ —
Figs, Black..... 3 @ 3½
Figs, White..... 3 @ 4
Peaches, unpeeled..... 3½ @ 4
Plums, unpitted..... 1 @ 1½

Reviewing the dried fruit market in the East, a New York contemporary represents the situation as follows, according to late mail advices:

Evaporated apples have shown no material change this week; supply is light, and while movement continues slow stock is held with confidence at full late prices. Desirable grades of southern sun-dried have had some call from the west and tone is firmer, though State quarters continue dull and weak with 4¢ extreme. Chops are in few hands and held with confidence, though demand light. Waste dull, though some of the large holders are unwilling to consider bids below 2½¢. Some business has been reported in futures on the basis of 6½@6¼¢ for prime evaporated apples, 2¢ for chops and 1½¢ for waste for October, November and December delivery. Raspberries have had some call, but other small fruits very quiet and nominal. Cherries about cleaned up. California apricots and peaches are meeting a steady demand, with occasional sales, especially of fancy Moorpark apricots, above outside quotations.

Apricots, Cal. Moorpark, 1897, per lb..... 10 @ 12½
Apricots, Cal. Royal, 1897, per lb..... 8 @ 9
Peaches, Cal., 1897, peeled, per lb..... 10 @ 16
Peaches, Cal., 1897, unpeeled, per lb..... 5 @ 9
Pears, Cal., 1897, per lb..... 5 @ 10
Prunes, Cal., 1897, per lb..... 4 @ 8½

Raisins.

There are not many Raisins now in store in this center, although stocks have been increased to some extent this week by arrivals from producing points. Supplies remaining in State are estimated at about 300 carloads, but probably not over 15 per cent of these are

Potash

gen. Too little Potash is sure to result in a partial crop failure.

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choice. Quotable values are unchanged, but market for other than best qualities is devoid of firmness.

F. O. B. FRESNO DELIVERY.
Imperial Clusters, per box..... — @ —
Delmas Clusters, per box..... — @ —
Fancy Clusters, per box..... — @ —
Boxes, London layers, 20-lb box..... 1 00 @ —
(Usual advance for fractions.)
Loose Muscatel, 4-crown, # lb..... 3¼ @ —
Loose Muscatel, 3-crown, # lb..... 2¼ @ 2½
Loose Muscatel, 2-crown, # lb..... 1¼ @ 2
Sultanas..... 3 @ 3½
Seedless Muscatel..... 1½ @ 2
Dried Grapes..... 1 @ 1½

Citrus Fruits.

Oranges are plentiful for this time of year, but the proportion of offerings of choice is light, and only the latter command what can be termed firm figures. Lemons are in less excessive stock than for a week or two preceding, and prices averaged slightly higher, especially for best qualities. Limes remained about as last quoted.

Oranges—Navel # box..... 1 50 @ 3 00
St. Michaels..... — @ —
Seedlings..... 75 @ 1 25
Tangerines, half box..... — @ —
Lemons—Cal., select, # box..... 1 75 @ 2 00
Cal., good to choice..... 1 00 @ 1 50
Cal., common to good..... 75 @ 1 00
Limes—Mexican, # box..... 4 00 @ 4 50
Cal., small box..... 75 @ 1 00

Nuts.

Next to nothing doing in Almonds and Walnuts, with prices quotably unchanged. Peanuts of prime to choice quality are in good demand, with offerings light. Almond crop will only be about 10 per cent that of last season. Most of the Walnut trees are bearing heavily, but in the non-irrigated sections the nuts will likely be small.

California Almonds, paper shell..... 9 @ 10
California Almonds, soft shell..... 7 @ 8½
California Almonds, hard shell..... 4 @ 4½
Walnuts White, paper shell..... 7½ @ 8½
Walnuts White, soft shell..... 7½ @ 8½
Walnuts White, Cal., standard..... 6 @ 7
Chestnuts, Cal. Italian..... — @ —
Peanuts, Cal., fair to prime..... 4½ @ 4¾
Peanuts, Eastern hand-picked..... 5 @ 6
Pine Nuts..... 7 @ 8

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|--------------------|--------------------|----------------------|
| Flour, 4-sks..... | 86,231 | 5,049,307 |
| Wheat, cts..... | 58,945 | 10,340,147 |
| Barley, cts..... | 32,315 | 4,523,653 |
| Oats, cts..... | 7,840 | 688,150 |
| Corn, cts..... | 16,425 | 386,548 |
| Rye, cts..... | 1,040 | 48,921 |
| Beans, sks..... | 6,685 | 569,145 |
| Potatoes, sks..... | 20,116 | 1,115,025 |
| Onions, sks..... | 3,587 | 115,496 |
| Hay, tons..... | 1,345 | 121,517 |
| Wool, hales..... | 1,806 | 72,889 |
| Hops, hales..... | 30 | 9,125 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|---------------------|--------------------|----------------------|
| Flour, 4-sks..... | 28,720 | 3,182,980 |
| Wheat, cts..... | 38,589 | 9,796,421 |
| Barley, cts..... | 7,142 | 3,006,483 |
| Oats, cts..... | 1,937 | 20,641 |
| Corn, cts..... | 2,434 | 47,328 |
| Beans, sks..... | 284 | 301,888 |
| Hay, bales..... | 1,681 | 77,982 |
| Wool, lbs..... | 14,241,776 | 16,628,249 |
| Hops, lbs..... | 689 | 1,388,474 |
| Honey, cases..... | 9 | 7,456 |
| Potatoes, pkgs..... | 622 | 184,123 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets per for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of the THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

California Dried Fruit at New York.

New York, June 15.—California dried fruits quiet; apples steady. Evaporated apples, common, 7½@8¢ # lb.; prime wire tray, 9@9½¢; wood dried prime, 9½¢; choice, 10¢; fancy, 10½¢. Prunes, 4@8½¢ # lb. Apricots, Royal, 8@10¢; Moorpark, 10@12¢. Peaches, unpeeled, 6@9¢; peeled, 12@16¢.

is one of the three important ingredients of a complete fertilizer; the others are phosphoric acid and nitrogen.

Eastern Sales of California Fruit.

NEW YORK, June 13.—The Earl Fruit Company sold California fruit at auction, realizing the following prices: Cherries—Black Republican, \$1.50 to \$1.85, average \$1.57; Black Tartarian, 85¢; Purity, 80¢ to 85¢; Royal Anne, 90¢ to \$1.25, average \$1.07. Apricots, Royal, \$1.65 to \$1.80, average \$1.74. Plums, Clyman, \$1.15 to \$1.50, average \$1.36. Peaches—Alexander, \$1.15 to \$1.80, average \$1.47.
BOSTON.—Cherries—Lowell, \$1.30; Royal Anne, 75¢ to \$1.35, average 93¢.
CHICAGO.—Royal, 70¢; Black Republican, 80¢.
MINNEAPOLIS.—Black Republican, \$1.20; Royal Apricots, \$1.30; Alexander Peaches, \$1.30; Tragedy Prunes, \$1.75; Clyman Plums, \$1.05.

CHICAGO, June 13.—The Earl Fruit Company sold California fruit to-day as follows: Apricots—Royal, \$1.25 to \$1.75. Plums—Japan, \$2.40; Yosabe, \$2.30. Prunes—Tragedy, \$1.65 to \$2.30. Peaches—Alexander, 80¢ to \$1.10.

NEW YORK, June 13.—The Earl Fruit Company sold California Fruit to-day as follows: Apricots—Royal, \$1.09 to \$2.05. Plums—Clyman, 90¢ to \$1.90; Tragedy, \$2.05 to \$2.10. Peaches—Alexander, 90¢ to \$1.50.

CHICAGO, June 14.—Porter Bros. Company sold to-day at open auction California Fruit at the following prices: Plums—Yosabe, \$1.70 # crate; Clyman, 40¢@80¢; St. Catherine's, 70¢; Royal Hatives, 60¢@75¢. Prunes—Tragedy, \$1.40@1.55 # crate. Apricots—Royal, 85¢@1.55 # crate; Montgamets, \$1.45@1.50. Cherries—Royal Anne, 50¢@1.40 # box; Bigarreau, 95¢@1.10; Tartarian, 40¢@1.10; fancy, \$1.15; Pontiac, 85¢. Peaches—Alexander, 40¢@75¢ # box; May, 60¢; Hale's Early, 50¢.

NEW YORK, June 14.—Porter Bros. Company sold to-day at open auction California Fruit as follows: Plums—Thissell's Jap, \$1.45@2.30 # crate; Yosabe, \$1.25; Clyman, 85¢@1.30; Royal Hative, 90¢@1.05; Cherry, 80¢@85¢. Prunes—Tragedy, \$1.55 @2.10 # crate. Cherries—Royal Anne, 55¢@2.05; Tartarian, 45¢@1.20; Bigarreau, 55¢@85¢; Oxheart, 45¢@65¢. Apricots—Royal, \$1@1.55 # crate; Blenheim, \$1.20. Peaches—Alexander, 80¢@1.05 # box; Governor Garland, \$1.

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THE DAIRY.

Stanislaus County Creameries.

The new Acme creamery, on the Wilmans tract on the West Side, was started up on Monday of last week, says the Modesto *Herald*, receiving that day 4000 pounds of milk, the quantity increasing daily until over 7000 pounds were received on Friday. As there is an abundance of alfalfa pasturage in that quarter of the county, and as the farmers are adding to their dairy stock, the receipts of milk will very soon reach 10,000 pounds or more daily. The creamery apparatus runs to perfection, the management is in experienced hands and the advance demand for the butter guarantees the ready sale of the output. The farmers receive back their milk after the butter fat is extracted and feed it to hogs. A cold-storage plant will be in readiness for use before hot weather comes on, and incidentally will afford the patrons sufficient ice for home consumption—a luxury not readily obtained heretofore.

Guy Kilburn and his son Ned purchased of Mrs. Rinehart of Modesto the entire dairy herd that lady has acquired while in business near this city, comprising sixty head. The junior gentleman will manage the herd, which will feed on the rich pastures of the Kilburns and very materially swell the output of the Acme creamery.

The New Era creamery, just the other side of Newman, has been a dividend-paying success from its inception, about two years ago, materially augmenting the prosperity of its patrons and of Newman town. The Acme creamery will in no respect whatever decrease the patronage and business of the older institution, the New Era depending upon the farmers of Newman locality and the Acme upon the farmers of Crow's Landing locality.

Too Soon.—When the Oakdale creamery enterprise was first proposed, the *Herald*, while pointing out the advantages to be derived from a creamery, questioned the expediency of proceeding until a greater acreage of alfalfa was available for pasturage. The creamery was built, however, and an assessment quickly followed. Now, after a run of about two months, the receipts of milk at no time exceeding 3000 pounds daily, the creamery has been closed for the summer because the scarcity of feed has resulted in the diminution of the milk supply to a quantity too small to warrant operations. A year hence will no doubt see enough land, under the Oakdale ditches, in alfalfa to afford pasturage all the year round for cows sufficient in number to keep the creamery in operation steadily; but in the interim the creamery is not making a name for its product, is not building up a trade, interest on the investment is lost and the men who have purchased dairy herds will probably lose money. The project was prematurely consummated, but it will eventually be a success.

Others in Prospect.—Year after next we expect to see enough alfalfa in Turlock district, around Hickman, to warrant a creamery investment—about \$5000—another at Ceres and a third at Turlock. The Turlock district canal system will be completed this year, and we doubt if even the most rabid anti will refuse to at once take advantage of the water to benefit his condition and to obtain recompense to a more or less extent for past and prospective taxes.

THE APIARY.

Central California Beekeepers.

The Central California Beekeepers' Association met last week in Hanford, Joseph Flory presiding, W. A. M. Gilstrap, secretary. The Hanford *Journal* reports the proceedings. F. E. Brown said he could furnish honey in a week or two made in Kern county. Some said the bees were making a living, while others thought they needed feeding.

Orioles.—C. F. Chrisman reported that orioles had caught numbers of bees on honey locust trees and crushed them for the contents of the honey sac. They were not of the Baltimore variety.

A. K. Gilstrap had seen the same birds catch and destroy drones in the manner indicated by the preceding speaker, but had never seen workers that been destroyed. He submitted a bird and some crushed drones in evidence. It was decided by President Flory to hold the oriole under bonds pending investigation.

After some more discussion of the habits of the oriole adjournment was taken for dinner. On reassembling various honey plants were examined and commented upon.

Marketing.—F. E. Brown read a paper on marketing honey. He strongly urged that new cans and cases be used in packing extracted honey. He urged the selling of the honey in Eastern markets direct. The secretary suggested that the honey might be sold in California markets to better advantage. The cost of sending honey to Chicago this season is \$1.10 per hundred pounds, as against \$1.30

last year. Comb honey goes at \$1.10 per hundred. The Southern Pacific Company will mix car lots of comb and extracted honey, each to go at car rates. It is not yet certain that the Valley road will do so.

It was decided to notify the manager of the Trans-mississippi and International Exposition that the association would not make a display at Omaha.

Resolutions were ordered spread upon the records lamenting the loss of a former president and pioneer bee keeper, J. H. Hart.

Officers.—Officers were elected for the ensuing term as follows: President, Joseph Flory; vice-presidents, for Kings county, J. L. Narwell; for Tulare county, J. F. Bolden; for Fresno county, W. A. H. Gilstrap; treasurer, C. F. Flory; secretary, F. E. Brown; executive committee, J. L. Narwell and J. F. Flory.

The association adjourned to meet at Hanford on the first Wednesday in September.

Fresno County Beekeepers.

The Fresno County Beekeepers' Association met June 9th in the City Hall with a good attendance of members, who took a lively interest in the proceedings. The meeting was called to order by Firman Church and an amendment to the constitution and by-laws was adopted requiring the election of two vice-presidents and a botanist. C. M. Davis and J. A. Roberts were elected vice-presidents and J. P. Johnson botanist.

Co-operative methods in selling the honey crop were discussed favorably and some way of pooling the output will no doubt be adopted in the near future.

J. A. Roberts, inspector of apiaries, reported that Mrs. James Stephens recently discovered that the cause of so many dead bees being found under locust trees was on account of orioles killing the honey makers. Mr. Roberts stated during his talk that 200 stands of bees properly arranged are more profitable than twenty acres of alfalfa.

The advantages of extracting honey over selling it in the comb was discussed and considerable valuable information brought out by the different members of the association who took part in the discussion.

FRUIT MARKETING.

The Price of Apples.

TO THE EDITOR:—It is a pity always to mislead by exaggerated statements. California is no way helped by such virtually fictitious figures as those given in Mr. Rudisill's essay on apple growing read at the Los Angeles Convention. I think I objected then, and I now renew my objection, to such a practically incorrect assertion as that apples sell in California at from \$1.50 to \$4.50 a bushel. I am not prepared to say that apples never sell in single pounds at 10 cents per pound, but to speak of apples bringing any such price to the grower is simply absurd; and Mr. Rudisill's essay was supposed to be written for intending growers.

Pajaro valley is the chief apple-growing center of this State. The season of '96-'97 made the best record for prices for several years. W. Robt Eaton, president of the Pajaro Valley Fruit Exchange told me they cleared 33 and a fraction cents per box; and he thought that an exceedingly good price.

Anyone who has watched the market fluctuations the present season will know that \$1.50 has been about the best San Francisco price obtained, even for fruit kept at considerable expense in cold storage. Deduct from this freight 10c., cartage 2c., commission 12c., cold storage warehousing and handling say 12c., box 7c., packing and paper 3c., and, at this extreme market figure, it will be seen the grower barely clears \$1 per box. And it will be safe to say that \$1 per box was much nearer the average price, gross, obtained than \$1.50, so that the net price to the grower for Yellow Newtown Pippins sold in the San Francisco market was about 60 cents per bushel. And a great many sold for as low as 60 cents gross.

In this section of the State (Pacific Grove) very poor apples were retailing at 60 cents per box a great part of the winter, while in the Pajaro carloads (especially Missouri Pippins) were dumped rotten.

Pacific Grove, June 11, 1898.

Mr. Rudisill's words were, as printed on page 356 of the *RURAL* of June 4: "Retail prices to the consumer ranging from \$1.25 to \$4.50 per bushel," and he said in the discussion that he referred to prices at the fruit stands. His use of such prices was to show that people would have apples even at such extravagant figures and his conclusion was that more apples could be profitably grown. No doubt Mr. Rudisill was correct in just what he said. Mr. Bertakes quite another point of view and naturally cites other figures. Whether his are right or not we can tell better after the Watsonville people get through with him. But Mr. Berwick surely will not be

surprised at the thought that the retail purchaser pays for his little bag of apples six to ten times what the fruit netted the grower. We supposed fruit growers were sort o' getting used to such things.

New Fruit Incorporations.

Articles of incorporation of the Duarte Deciduous Fruit Association were filed June 8th with the Los Angeles County Clerk. The purpose of the Association is to borrow money, loan and make advances of the same, upon products in possession of or in control of the corporation, and for other purposes. Principal place of business, Duarte, California. To have five directors, named as follows: Frank I. Bliss, J. K. Shrode, Thomas Glenn, Samuel Maxwell and Wm. Chippendale. Capital stock \$2500, divided into 500 shares of a par value of \$5 each. Amount actually subscribed, \$290.

The same objects pertain to the San Gabriel Deciduous Fruit Association, with five directors, named as follows: W. A. Hartwell, S. D. How, Morton Haig, Jas. A. Parker and Edmund H. Parker. Capital stock \$3000, divided into 600 shares of a par value of \$5 each. Amount actually subscribed, \$520.

THE IRRIGATOR.

Combined Outfit for Irrigating and Fertilizing.

A Delaware county, New York, grower of vegetables and small fruits gives *Farm and Home* an account of his outfit for combining irrigation and liquid manure distribution which may be suggestive to California gardeners. He raises water from a brook, using a hydraulic ram and a 4x6-inch box pipe made from 2-inch pipe and spiked together. About ten rods of this pipe was laid in the bed of the brook, the lower end being attached to the upper end of the iron drive pipe, giving a fall of 5 feet from the inlet of the box pipe to the ram.

The Liquid Manure Tank.—Near the ram on the highest bank a tank was built of 100 bbls. capacity, matched and jointed in white lead and strengthened by iron girders, one through each end and another through the center. Top of tank is 13 feet above bed of brook. A 1-inch discharge pipe 16 feet long carries water from ram to tank. The ram fills the tank once in twenty-four hours. For irrigating two acres about sixty rods of 1½-inch distributing pipe is used. From the tank iron pipes are laid in various directions over the gardens. Every third coupling has a J with an iron plug to be unscrewed and hose attached. Water is distributed at night by hose or surface flowing.

Fertilizers are dissolved and fed direct to plants. He will experiment with nitrate of soda and has used stable and poultry manure with good results. To prevent distributing pipes clogging, a slatted box was built in one end of the tank; poultry and sheep manure are suspended in a wire frame. The main distributing pipe is covered with a strainer inside the tank.

Rotation of Crops.—Crops are rotated. Set one-half acre of strawberries each spring. These are fruited two years. Early in July potatoes are plowed under and winter celery set. The next year the same ground is set to early celery and the next year to strawberries again. Cabbage and cauliflower are raised between berry rows the first year. This plan provides for one acre of strawberries, one acre of celery and one-half acre of cauliflower and cabbage each year.

Strawberry Irrigation.—Strawberry irrigation begins early in May. Pipes are laid over the field 100 feet apart. Water is distributed through 75 feet of hose. To prevent soil baking, a mulch is placed along the rows and a narrow channel reserved for water. Water is started at the upper end of the row and each row watered in turn. The manure is removed from tank weekly, used as a mulch, and one or two one-horse loads of rotted manure supplied. When irrigating celery, mulching between the rows is very important, as the soil should be kept cool and moist.

Something New in Dam Building.

The dams built in California by the hydraulic miners to comply with the requirements of the Debris Commission are small affairs in comparison with some of the storage reservoirs and restraining dams in some portions of the State for irrigation, electrical, and general supply: masonry dams of massive construction being not uncommon. But at Ash Fork, Arizona, has recently been completed a novelty in such building, being a steel dam in which all pressures and strains are resisted directly by the steel framework.

In the dry territory traversed by the Santa Fe railway great expense has been incurred in

getting water for the locomotives and stations. Two years ago the company decided to establish large reservoirs by damming some of the valleys and canyons. Three such reservoirs have been established in Arizona, two of which are formed by masonry dams, and the third by a steel dam, near the town of Ash Fork, situated four miles east of the station of that name on the Santa Fe Pacific railway (Atchison, Topeka & Santa Fe railway system), and the northern terminus of the Santa Fe, Prescott & Phoenix railway. Previous to the establishment of this reservoir, water was brought by rail from Williams, twenty-three miles away, and at times from Bellemont, forty-five miles distant.

The reservoir was built mainly for supplying the engines of the Santa Fe Pacific railway, and incidentally for supplying the town of Ash Fork and the engines of the Santa Fe, Prescott & Phoenix railway. The average consumption is estimated at 90,000 gallons per day. The reservoir has a capacity of 37,000,000 gallons, taking the flow from a drainage

safely permit a flow of 6 feet deep over its crest, which is believed to be greater than will ever be experienced. It may be that the flow over the crest will occur so seldom that the rock under the overfall can take the wear without danger, and a protective may be unnecessary.

Departure of the Monterey.

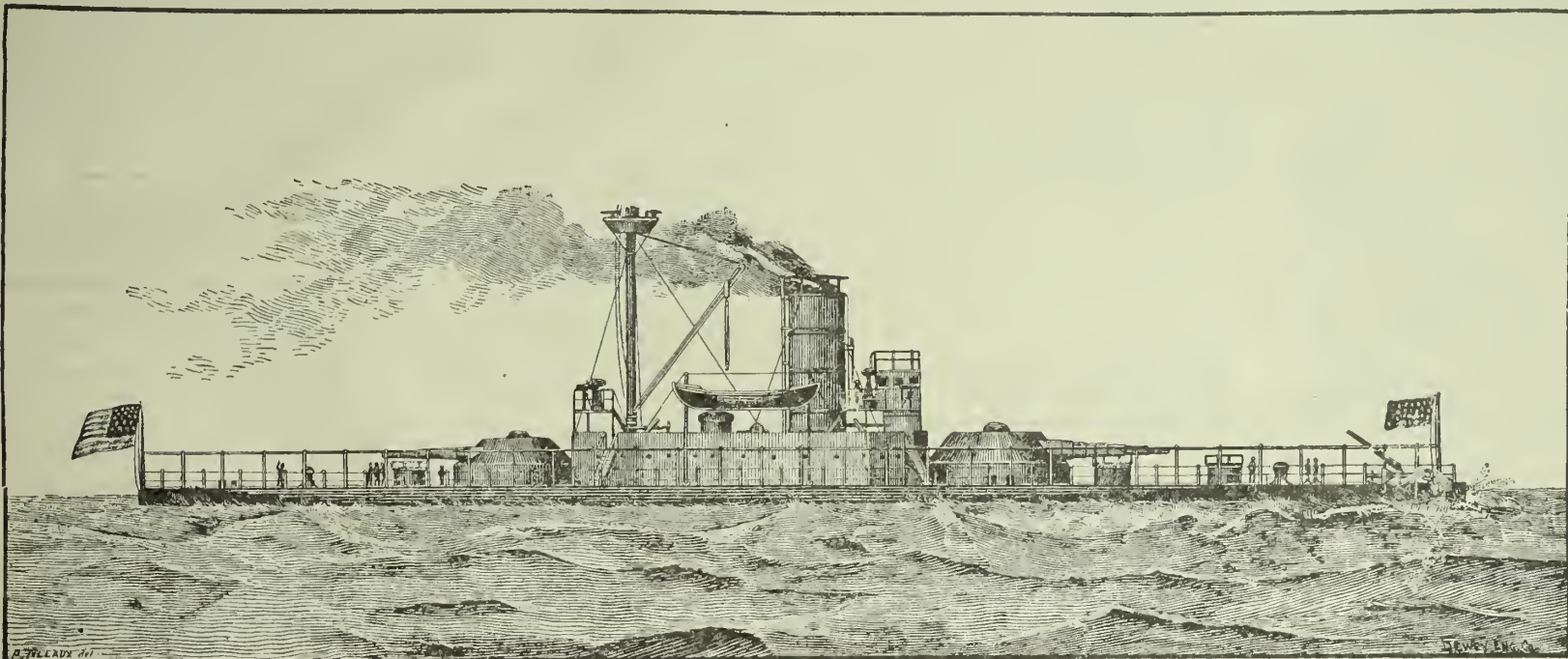
The cruiser Monterey, illustrated on this page, left San Francisco last week for the Philippines. The month of May, '98, was a momentous one for U. S. history. Public opinion declared against the hundred-year old policy of the U. S. Government, and imperiously required Hawaiian annexation and possession of the Philippines. In this San Francisco has had prominent part. It was from the bridge of a San Francisco built vessel—the Olympia, built by the Union Iron Works—that Admiral Dewey directed the great fight at Manila. It is a San Francisco

ute, 5000 H. P. There are two steel main boilers, 11 feet 2 inches in diameter, length 10 feet 7 inches, with four other tubular boilers in addition, all designed for a pressure of 160 pounds.

The armament of the vessel is: Two 12-inch breech-loading rifled guns with 13-inch steel armor protection; shield 8 inches thick; projectile weighing 850 pounds; powder charge 425 pounds; two 10-inch breech-loading rifles mounted en barbette, with 11½-inch steel armor protection; steel shields 7½ inches in thickness, projectile weighing 500 pounds and powder charge 250 pounds.

There are also fifty-four 6-pound rapid-firing rifles; four 37-millimeter Hotchkiss revolving cannon and two 1-pound rapid-firing rifles. In addition to the above armament, she has a 15-inch pneumatic dynamite gun, which will throw 1000-pound projectiles containing 500 pounds of dynamite or other high explosives.

The Monterey was the first ship of the United States Navy fitted with the Ward sectional boilers.



ARMORED COAST DEFENSE VESSEL MONTEREY.

area of about twenty-six square miles, and it is believed that the evaporation will amount to about 9 feet per year. The steel dam is 184 feet long on top and about 300 feet in total length, if a short concrete abutment at either end is included. Its greatest height is 46 feet. Structurally it consists of a series of triangular steel-bents or frames, resting on concrete foundations and carrying steel face plates on the inclined or upstream face of the bents.

The foundations for the steel bents are of concrete, composed of one part of Alpha Portland cement to three parts of sand and five parts of broken stone. The stone used was the excavated rock, broken up by hand hammers. The foundations for the vertical and the inclined posts were built before the iron work was erected. The vertical posts rest on concrete walls, and the higher walls are faced with rubble masonry on the side facing the canyon. The outlet is a 6-inch pipe embedded in concrete in a trench excavated in the rock under the dam, the pipe terminating in a drain within the reservoir.

From the downstream end of this pipe a 4-inch pipe line extends to Ash Fork, four miles distant. A notable feature of this structure is that there is no spillway or waste weir, the dam being designed to

built battleship—the Oregon—that is now attracting the attention of the world's naval authorities by her 14,000-mile round-the-Horn voyage, arriving in fighting trim and needing no repairs. Other San Francisco built ships have given good account of themselves in every sea and are foremost now in connection with this acquiring of island empire in Eastern waters.

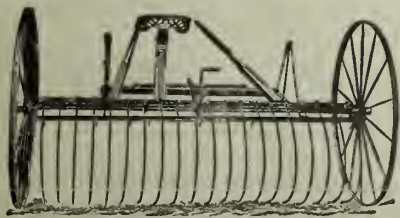
The Monterey, which went through the Golden Gate en route to the Philippines on the 7th inst., is a double-turreted, twin-screw, armored coast defense vessel, launched by the President of the United States—Benj. Harrison, in May, '91—from the yard of the Union Iron Works, the third man-of-war launched up to that date from the ways of that firm. She is steel built throughout, double bottom; there are 110 water-tight compartments in her hull that can be promptly filled with water, submerging her sides until she has but one foot free board.

The propelling engines are of the triple-expansion type, 30 inches stroke, the high-pressure cylinder being 27 inches, the intermediate 41 inches, and the low-pressure 64 inches in diameter, which, with the vacuum, etc., develop, with steam pressure at 160 pounds per square inch and 150 revolutions per min-

The engines, boilers, magazines and all the machinery is protected by armor, 16 inches in thickness.

Originally built, like the Oregon and Olympia, for San Francisco harbor defence, she, with the two named, now goes to fight foreign foes in their own waters, and, as in the case of the others, will doubtless aid in upholding the nation's flag in any stress.

In connection with the departure of the Monterey, probably never to return, it is interesting to note that in the present war with Spain, the war vessels built by the Union Iron Works of San Francisco, and largely manned by Pacific Coast seamen, fill the public eye almost exclusively. At the great San Francisco shipbuilding establishment have been built the first-class battleship Oregon, the coast defense doubled turreted monitor Monterey, the U. S. cruisers Charleston, San Francisco and Olympia. There have also been built the U. S. gunboats Marietta and Wheeling. At present the Union Iron Works is building the U. S. torpedo destroyer Farragut and the U. S. battleship Wisconsin. The recent great trip of the Oregon justifies the statement that San Francisco has an institution that has built the most perfect warship ever produced.



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Agricultural Department and War.

A press report from Washington says that the Secretary of Agriculture is taking a great deal of interest in the war with Spain and has rendered the War Department considerable valuable service with his expert knowledge of affairs. He has given the Commissary-General and the Quartermaster-General information concerning horses and food supplies and the army is in better trim for war on that account. During the civil war, horses and mules were taken without regard to size, pedigree or field conditions. Foraging was the rule, and all farm products were contraband of war for the successful advance guards. The Commissary of Subsistence took no time to carefully investigate food supplies, for armies are constantly forming or being re-enforced, and "get there" was the order of the day. While this war is slowly being formulated into a clash of arms on land as well as sea, the Quartermaster-General has ample time to select the best horses and mules obtainable and the Commissary-General has ample time to select the best obtainable food for the soldiers. The Secretary of Agriculture knows just where the best horses are raised—that is the best for military purposes. The cavalry and artillery require the heavy, solid, substantial fellows that can haul heavy ordnance and carry heavy cavalryman.

Army Veterinarians.—The Secretary of Agriculture, at the beginning, called the attention of the Secretary of War to the necessity of organizing adequate veterinary forces. There are very few veterinarians in our army who have been graduated by veterinary schools. At the instance of the Secretary of Agriculture the attention of Congress will soon be called to the fact that the United States army is the only one in the civilized world in which veterinarians do not hold commissions. For this reason the most competent men in the profession have not sought service in the army. They can do better in civil life. The Secretary of Agriculture says that in this day it displays ignorance to sneer at horse doctors. The noble animals, which have been the constant companions and the uncomplaining bearers of the burdens of men, deserve more consideration than they have received heretofore. They go through the campaigns as faithfully and they go into battle as bravely as do their human masters. The volunteer army, with the additional troops allowed by subsequent legislation, will aggregate 100,000 men, and the regular army will aggregate 60,000 men. Thus there is to be a total of 200,000 men bearing arms, when the armies are ready for the field. The number of horses required will be very large and the condition of the horses will become a matter of great importance.

Cuban Trade.—Although the Secretary of Agriculture has been able to give practical assistance to the army in this regard, in no other way will the Department of Agriculture be affected by the war, except as its work may be increased or diminished in the division of foreign markets. Before war with Spain was formally declared, our imports and exports were seriously affected by the guerrilla warfare which had been carried on in Cuba during the last three years. For example, in 1893 the total value of our Cuban trade amounted to upward of \$102,000,000. For the present fiscal year the total trade is approximately \$20,000,000. In sugar the shipments of 1894 amounted to more than 2,000,000,000 pounds. For the current fiscal year the importations will amount to less than 500,000,000 pounds. The Cuban tobacco sent to this country in 1894 aggregated 27,000,000 pounds. The amount imported during the present fiscal in less than 2,000,000 pounds. In 1894 Cuba sent us 16,000,000 gallons of molasses. For the present fiscal year we get practically none. The molasses trade is absolutely wiped out by the war. After the products mentioned about, fruits and nuts from the most considerable item among our imports from Cuba.

Bananas are the chief variety imported, constituting in value more than half of the entire item. The only other fruit received from Cuba in any considerable quantities is the orange. Cocoanuts are imported to some extent. Other products that should be mentioned in reviewing our imports from Cuba are hides and skins, bones, beeswax, honey, vegetables and vegetable fibers. All of these items show a falling off during the last two or three years. On the other side of the account, we sold \$5,000,000 worth of lard in Cuba in 1896; now we send none. We used to send 6,000,000 pounds of bacon, and 4,000,000 pounds of hams to Cuba every year. That trade also is destroyed. Potatoes, peas, beans and all other vegetables from this country which were sent to Cuba amounted to more than \$1,500,000 annually. Now we send vegetables there only for sweet charity's sake.

Good Roads for Cuba.—The Government of the United States proposes to build some good roads in Cuba. While it is true that these good roads will be intended solely to facilitate the movement of troops, they will remain an improvement which will be enjoyed by the people of that island long after peace has been restored. Realizing the advantages to be obtained by having good roads for the troops and wagon trains, especially in a tropical country during the rainy season when lowlands are flooded and the rude country roads are impassable, the Secretary of War, at the request of Gen. Miles, secured the detail of Gen. Roy Stone of the Agricultural Department, who has for years been conducting a good roads investigation, and is an expert on that subject. Gen. Stone with his assistants will accompany the army of invasion and superintend road-building. He will take with him the road machinery owned by the Department of Agriculture, and some of the latest and most improved devices which have been obtained at his suggestion by the War Department. It is proposed to utilize some of this machinery in the construction of trenches and other works about the fortifications. Gen. Stone was the gallant leader of the famous Bucktail Regiment of Pennsylvania during the civil war, and is enthusiastic in his new project. He says that had an effort been made on several occasions during the late unpleasantness to build roads for the use of the Federal army advantages of unmeasurable value would have resulted. Instead, however it often occurred that the Union forces were compelled to remain in camp for prolonged periods waiting for the mud to dry. He hopes to be able to reduce these enforced delays to the minimum by making roads for the troops.

A Farmer's Club.

An idea which could be advantageously adopted in every county town in the West has been introduced at Dixon, Ill., and a number of other points throughout the country. It consists of the establishment of a farmer's club room in the town, to be used by them as a rendezvous or headquarters when they visit town on business. A commodious room is provided with chairs, tables, newspapers, provisions for heating in the winter, a blackboard to announce wants, articles for sale, etc., toilet conveniences, a place to eat lunch, a separate apartment for the use of the ladies of the farmer's family, and generally such comforts as will

make a visit to town comfortable and make the farmer feel as though he had some place where he could be at home during his stay. The cost of maintaining such a clubroom is light when divided among many, and more than repays the cost to each.—Iowa Homestead.

Such a clubroom was established more than a year ago by the Fresno Farmers' Club, and since then several others have been opened in California towns. They are serving a good purpose.

Coast Industrial Notes.

—Twenty-seven carloads of oranges were shipped from Redlands, Cal., during the week ending June 2. The total shipments to date are 1334 cars.

—For the ten months ending April 30th the gross earnings of the Oregon Railroad & Navigation Co. showed a gain of \$1,636,216; net earnings increased \$807,663.

—Mexico has exported \$2,000,000 worth of precious metals per month since January 1st. Four-fifths of Mexican exports are to the United States, which supplies Mexico with one-half of all its imports.

—Though the frosts damaged a portion of the oranges in southern California, the crop of the season drawing to a close will amount to considerably more than 12,000 carloads. Conservative people, who have given some study to the question, believe that if the crop of next season is not damaged by frost it should amount to 20,000 carloads, or over 100 carloads a day for six months in the year.

—The Southern Pacific R. R. Co. has filed at Oakland, Cal., articles of consolidation, amalgamation and incorporation of the Southern Pacific, the Northern Railway, the Northern California Railway and the California Pacific Railway Companies. The new corporation controls fifty-three lines of railroad, aggregating 4535 miles of rail and is capitalized for \$125,455,000. The directors are the same as those of the Southern Pacific Co.

—A cablegram received at Vancouver from London states that a cable is to be constructed from Vancouver to Dawson via Skaguay, Dyea and Wrangell. M. Eschevege at Vancouver represents the Vancouver Anglo French Telegraph Co., who are to construct the cable under a capitalization of half a million pounds sterling. The cablegram instructed Eschevege to survey the route and clear the right of way at once. The cable is in process of manufacture in England. It is to be a private commercial enterprise, unaided by the Government.

—From the Canadian government comes a

new order by which Canadian goods carried in American vessels from Canadian ports to Alaskan ports, and there transhipped to ports in the Northwest Territory, will be admitted free of duty. American goods upon which duty has been paid to Canada, carried subsequently by American vessels from Canadian ports in Alaska, and there transhipped to places in the Northwest Territory, will also be admitted free of duty. The section that applies directly to us is as follows: "Goods purchased in Canada, duty paid or free, and goods or produce of Canada which are carried to Alaska free of United States custom duty, may be admitted into the Northwest Territory free of Canadian custom duties, when shipped from ports in Canada, under regulations prescribed by the Minister of Customs, provided that the identity of the goods shall be established to the satisfaction of the collector of customs at port of entry."

—The San Diego, Cal., Union says that Pittsburg men have undertaken the development of the sulphur deposits in Lower California, near the head of the gulf, and will build a railroad from Yuma to San Diego, with a branch connecting with the sulphur mines. The syndicate, so far as its operations in Lower California is concerned, is known as known as the Mexican Sulphur M. Co. The Mgr. is J. A. Dubbs of Ventura. The mines are twenty miles above the mouth of the Rio Colorado, near the Hardy. These deposits are a series of low hills or part of an extinct crater. The sulphur is found in masses having a higher percentage than any body known. The deposits are on the flat desert, in one of the hottest portions of the earth's surface.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey, Strong & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR WEEK ENDING MAY 31, 1898.

- 604,953.—METER DIAL.—C. L. Arques, San Jose, Cal.
- 604,961.—TWINE HOLDER.—F. Bossong, Ellensburg, Wash.
- 604,962.—AIR COMPRESSOR.—E. Bottini, S. F.
- 604,976.—CYCLE HANDLE BAR.—E. H. Chappuis, Marysville, Cal.
- 604,825.—MUSIC LEAF TURNER.—C. Gittus, Jr., Golden Gate, Cal.
- 604,836.—CONVERTING MOTION.—A. Hadsall, Mapleton, Or.
- 605,044.—OPERATING ELEVATORS.—C. I. Hall, S. F.
- 604,985.—SPIRIT LEVEL.—J. Hartford, S. F.
- 605,045.—HORSE CONTROLLER.—G. A. Hidden, Phoenix, Ariz.
- 604,991.—STOVE.—Litchfield & Baugher, Spokane, Wash.
- 604,838.—BICYCLE FRAME.—J. R. Nagell, Tacoma, Wash.

NOTE.—Plain and Certified Copies of U.S. and Foreign Patents obtained by Dewey, Strong & Co., by mail or telegraphic order. American and Foreign patents secured, and general patent business transacted with perfect security, at reasonable rates, and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

CYCLE HANDLE-BAR FASTENING ATTACHMENTS.—Edward H. Chappuis. No. 604,976. Dated May 31, 1898. This invention relates to a means for securing the handle bars of bicycles with reference to the handle-bar post, to which they are attached, so that the handle bar may be turned with relation to the post to adjust the ends to varying elevations, and a means for locking this adjustment at any desired point. It consists essentially of a vertically movable handle-bar post, which is slidable in the socket within which it fits. This post is locked at any desired point by means of a cam lever which engages with corrugations, thus enabling the handle bar to be raised or lowered by simply turning the cam lever in one direction to free it and in the opposite direction to lock it as soon as it is adjusted. The handles are usually curved in various ways, and it is often desirable to raise or depress the ends of the handles without raising or depressing the central portion which connects with the post. This is effected by means of corrugating clamping disk faces upon each side of central disks similarly corrugated and fixed to the handle bar. Between the backs of these disks is a wedged-shaped ring which is turnable by means of a cam lever, so as to release the locking disks to allow the handle bar to be turned, and the lever may then be pushed back to clamp the disks with the bar in its new position. This adjustment is easily made, even without stopping or dismounting. The whole is covered with a slide or collar, which keeps it clear from dust.

Commercial Paragraphs.

THE California Stump Puller Company of this city shipped five of its machines to the Hawaiian Islands last week on an order. This makes about a dozen in use on the Islands, which speaks well for the merits of the California Stump Puller.

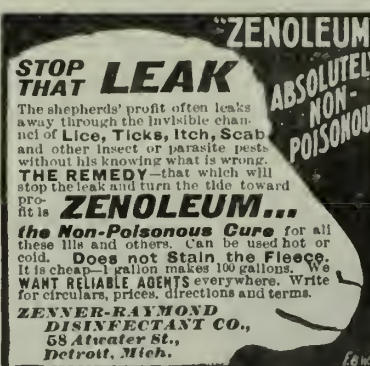
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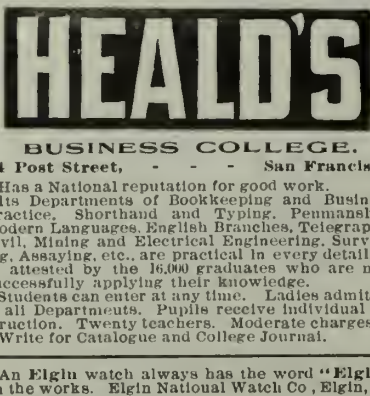


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Physical Condition of Volunteers.

The numerous discussions bearing on the physical degeneration of the average up-to-date American citizen have recently had a very practical demonstration of fact in the number of rejections for unfitness for military service, as the result of test examinations of recruits.

Lieutenant-Colonel Mans, U. S. A., who has charge of the enlisting bureau, found that it was necessary to examine 17,000 applicants in order to obtain 12,000 who were fit for field duty. The results show in the main that the ordinary militiaman who represents the average metropolitan is by no means up to the requirements of a first-class soldier. In other words, it would appear that the best is done with the material at hand. The influences of city life in causing a lack of physical development and vital power are plainly manifested in contrasting the number of acceptances from country regiments as compared with those from the large cities.

It has long been admitted that the best blood comes to us from the rural districts, where healthful surroundings, outdoor life, and moderate living make the sum and substance of that vital resistance to degenerative influences which is capable of meeting all the ordinary strains of modern civilization. This is one reason why the country lad makes his mark and succeeds where the city-bred youngster fails. In a generation or two the enervating influences of city life tell in an unmistakable way upon the physical development of the sturdy yeoman, who then becomes narrow chested, weak kneed, short sighted, and is no longer in the fore in the race. This fact is strikingly exemplified in the alarming proportion of rejections in city regiments, to which reference has been made. From such a point of view, it is quite evident that the city man is losing his physical grip, for reasons obvious to all who study his habits and note the ultimately pernicious influences of his depressing environment.—Medical Record.

Warships and Cruisers.

There is so much confusion as to the distinction between a cruiser and a battleship, that we summarize from the New York Times the difference between the two classes of vessels, says an exchange. A battleship is primarily a vessel designed to bear the brunt of battle with the most powerful ships of an enemy's fleet. Hence, in a battleship great speed must be sacrificed, because the machinery necessary to operate the big guns, the complicated framework needed to give the vessel strength, and the thickness of her armor render it impossible to give her sufficiently large engines and coal capacity to produce the speed. Furthermore, a battleship, being so limited in her coal capacity, is not expected to make long cruises. Her business is to fight and not to run about. A cruiser, on the contrary, is expected to do a great deal of travelling. She makes long voyages and does duty on foreign stations in time of peace. In war she dashes up and down a coast watching for the enemy, or performs scouting duty ahead of a squadron. She must be able to carry coal enough for her long voyages, and she must have speed enough to run away from the enemy's battleships or to catch merchant vessels. Hence she sacrifices weight of battery and armor to speed. A protected cruiser is one which has a curved

deck of steel over her engines and boilers, and has her coal bunkers arranged so that they give additional protection, two feet of coal being regarded as equal to an inch of armor. An armored cruiser is one which is further protected by light armor, not of sufficient bulk or weight to compel a sacrifice of speed. Our fleetest cruisers are the Columbia and Minneapolis, which can go from twenty-two to twenty-three knots an hour, but they have no armor and they carry only one 8-inch gun each and several smaller ones. The Massachusetts, which is a battleship, has nearly a foot and a half of Harveyized steel armor and carries four 13-inch, eight 8-inch and four 6-inch guns in her main battery, but has a speed of only sixteen knots an hour. The Maine was not a cruiser, because in her construction, speed and coal endurance were in a measure sacrificed to armor and battery.

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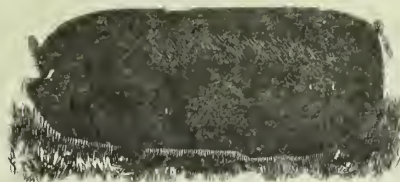
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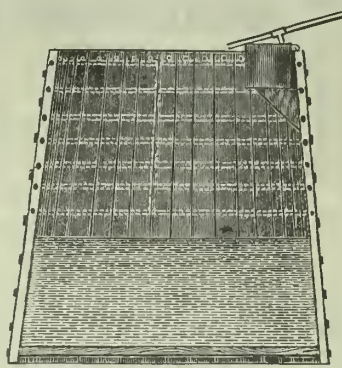
PATENTS

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| XVIII. Celery. | XXXVII. Seed Growing in California. |
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| | XXXIX. Weeds in California. |

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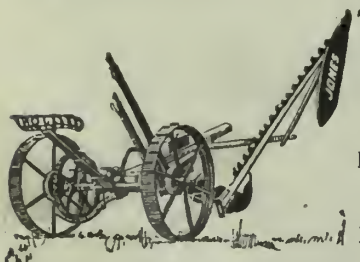
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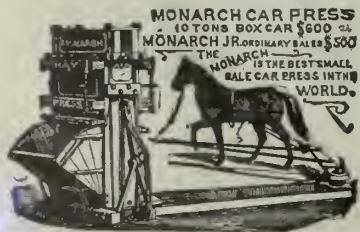
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LV. No. 26.

SAN FRANCISCO, SATURDAY, JUNE 25, 1898.

TWENTY-EIGHTH YEAR.
Office, 330 Market Street.

Rational Pruning of the Prune.

Californians have reached the present conception of proper form of a prune tree by a sort of evolutionary process. The objects to be secured are now more clearly discerned than formerly and the adaptation of means toward those ends is better understood. The successive stages of opinion and purpose in growing the tree may be named as follows: First, to continually cut back to promote wood growth and to postpone fruiting until the tree was large; second, to stop cutting back early so as to get fruit sooner; third, to refrain from cutting back at all so as to get as soon as possible as much fruit as possible; fourth, to cut back for two years and afterwards to thin so as to prevent excess of bearing wood so that the tree would produce a fair amount of the largest and most perfectly ripened fruit. The last-named conception of proper treatment of the tree is that



OLD STYLE OF PRUNING PRUNE TREES.

form has in any fruit tree: it presents too much bearing surface and sets so large a crop that the fruit is small and apt to be poorly matured for lack of sunshine in its dense interior spaces. It is to this form of tree that excessive yields of inferior fruit are due.

The lower pair of pictures show how a good lesson has been taken from the natural form so far as strength goes, but culture has taken the place of nature in regulating the amount of fruit and securing conditions adapted to its best maturity. This is the rational form of the tree as it is now understood by the best growers.

THE Suisun *Republican* of June 17th says: E. Luehning has returned from a visit to New York, whither he went to meet a representative of his dried fruit business in Hamburg, and to make arrangements for handling this year's crop. Last season Mr. Luehning shipped seventy carloads of dried fruit from Suisun valley and fourteen carloads from other sections to Germany.



UNPRUNED PRUNE TREES — NATURAL SYSTEM.

which prevails with most growers at the present time.

The engravings on this page are representative of these changing notions of procedure with the prune. They are all made from photographs taken by Mr. S. P. Sanders in the San Jose region, and were used by Mr. Bioletti in his paper on the frogging and bloating of prunes, in the last report of the University of California Experiment Station. The views of Mr. Sanders and Mr. Bioletti have both been given in previous issues of the *RURAL PRESS*, and we reproduce the engravings now to afford a striking illustration of the advance toward a more rational pruning of the prune tree aside from the curing character of the fruit which has been so clearly set forth by Mr. Bioletti.

The upper pair of pictures show how the old idea of a tree began with cutting back to a very low stem, allowing all the branches to emerge at one point. This postponed fruiting and gave a tree which broke badly both above and below when the crop came. Such trees are too common now because nearly all the older orchards were started that way. In spite of bolts and ropes and props they break badly, as the pictures show.

The central pair of pictures show the reaction from the above practice, which consisted in devotion to the natural form of the tree, as professed by non-pruners. It produces a good, strong tree, but it has the same objection that natural



RATIONAL SYSTEM OF PRUNING TO SECURE STRENGTH OF TREE AND LARGEST FRUIT.

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E. J. WICKSON..... Horticultural Editor.

San Francisco, June 25, 1898.

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The Week.

The war is still the all-engrossing topic. The local politicians are trying to warm themselves up for this fall's change of California State officers, but the people generally are occupied with greater themes for the present. Later in the autumn they may awaken to interest in the gubernatorial campaign. Just now the hurry of the harvest can spare only time for contemplation of the Greater America which the resistless course of events seems about to introduce to the councils of the Nations. Before another issue of the RURAL appears there are likely to be stirring events on both hemispheres.

Fruit affairs are moving rapidly. Already the overland shipments of fresh fruits for June are about 435 cars—nearly 100 cars more than thus far in June last year. Prices of canning fruits are well maintained. We hear of sales of fancy canning cling peaches up to \$65 per ton, but \$50 to \$60 per ton is more common for strictly acceptable canning selections. There is not much change from canning apricots at \$40 and freestone peaches at \$30 per ton. These prices are all good, though, of course, the man who has no clings is about as uncomfortable as he can be. All will plant them this fall and when they are grown—the canners, fashions may change. This has been the case with other fruits, but we honestly believe that the best cling peach varieties have both canning and drying points that cannot be surpassed.

Wheat is still drooping. Choice milling is held here as before, but it is a dull time in the mills and little is selling. Barley is slightly lower, while corn improves in the face of less visible Eastern corn. Hay is rather weak and \$1 per ton lower, though old pressed hay holds up well. Bran is lower and middlings weak. Hogs are firmer than last week, even at 5½c alive for the best. Dairy and eggs are unchanged, but not active. Some dried apricots are offering for future delivery, but no prices are established yet.

CALIFORNIA'S deficiency in wheat this year is more impressive when the greatness of the crop of the whole country is thought of. California is counted for only one-third of a normal crop in the report of the Government Statistician, while of twenty-four States reporting on the condition of spring wheat, and which include New England and the Pacific coast, six report a full normal crop and eleven a condition indicating from 1 to 14 per cent above the normal. The winter wheat is also reported at 90, while the average for ten years is 81. This shows that the United States can feed her army and sell wheat besides.

A Use of Adversity.

It may be profitable as we are passing along through this peculiar year to cogitate upon the somewhat unusual experiences which present themselves and endeavor to appreciate their significance and relations. One lesson of the year will surely be the feasibility and profitability of a greater variety of products on single farms than has commonly been credited to California. The multiplication of farm and orchard irrigation facilities, the wide recourse to summer crops to replace the hay which failed and the pasture which was scant in amount and short in duration, and the many ingenious things which have been done this year to save cash or credit, must at least have convinced many people that there is a latitude in California farm practice which they had never appreciated. We have always claimed that California soil and climate could produce everything, and yet, as a rule, our farm policy has been very narrow. We have carried the truth of special adaptations in lands and men to such an extreme that we have established our farm enterprises upon the chance of selling one thing and buying everything. It is sometimes very good policy, of course, but as a rule agricultural forehandedness rests here, as everywhere else in the world, upon selling many products and buying few. It is quite true that large areas of California are not well suited to widely diversified farming, when trust is placed in rainfall, but it is also true that a summer water supply, even of limited volume, opens a possibility of diversification probably as wide as the world can show.

We apprehend that many people have become convinced of this fact this year, not only with reference to their sections but for their own farms as well, and it is to be hoped that not only will local markets in every region be enriched by home-grown supplies of fresh produce in variety but that home tables on the farms will be similarly endowed.

Three groups of products are usually implied when one speaks in California of diversification: the dairy, the poultry and the garden; and these are to be added to the staple products of grain or fruit according to the direction in which the region is specialized. But there is no universality about the factors of diversification. There are grain farms which should have stock and fruit; some fruit farms which should have at least cows, pigs and poultry; some dairy farms which should have grain and fruit, and even some poultry farms which should have cows and fruit—and some of each, perhaps, which should have none of the other because of lack of adaptation either in farm or owner. Let it be understood then that there is no particular value on the mere fact of diversity. Diversity is merely a means to an end, and if it is not intelligently and enthusiastically used it will be the end itself which will be mean. Diversity does not signify scattering effort and energy. It is not an old smooth-bore cannon full of grapeshot; it is a modern rapid-firing gun of the best construction.

The old exhortation, then, to a wider use of the adaptations of each region and each farm has greater force in California this year than ever before, because, through the force of circumstances, so many have learned that more products are possible almost everywhere. The scores of instances of successful individual effort for irrigation water which have been described in our columns from week to week are very significant. For example, read the brief account of irrigation activity around Hollister which is given in our San Benito county notes in this issue. This is all new and probably none of it would have been undertaken had it not been for the dry year. And this is only one week's notes in a fraction of a county. Similar things are being done almost everywhere. They really open a new vista of productive activities. They will change the colors of the summer landscape; they will people many fields with well bred stock richly fed; they will double the milk receipts of the local creamery and induce the building of others; they will increase and improve the meat products and multiply the egg and poultry surplus; they will keep bringing money into the valley each week in increased amount for minor products in variety without decreasing the income from two or three great staples which have for years past brought prosperity to the valley, but

will make these staples themselves surer of reward.

And what the enterprise for supplementary products will return to Hollister valley will be realized by many other valleys which are now awakening to new possibilities in ways of winning comfort and prosperity for the individual and wealth for the community. The lesson should be for all to press onward along these lines. Do not consider the discoveries of this summer merely makeshifts for a dry year. Regard them rather as outcroppings of wealth which should be diligently developed. If hastily sunk wells and extemporized pumping machinery can do so much, figure what better wells and better pumps and motors can accomplish and make wise investment to that end. If unusual crops which the grower but imperfectly understands serve such a good purpose, how much better results can be secured by better knowledge of the new cultures and better work with them. Evidently we are just at the beginning of better use of California agricultural conditions and adaptations, and the losses and deprivations of this year are quite likely to prove blessings in disguise.

CLOSE OF THE VOLUME.—This issue completes Volume LV of the PACIFIC RURAL PRESS and the index on the last page shows the wide range of topics which have been brought to the reader's attention during the last half year. In some respects we count this one of the most interesting and important volumes we have ever published. Certainly not for years has our agriculture shown such scope and variety, nor such active demand from our readers for up-to-date information in new lines. This makes the editor's task decidedly interesting and serves to align the journal more closely with the reader's interests. The idea of being useful in the industrial advancement of its constituency is an inspiring one in a technical publication, and it is encouraging to think that we have been able to serve that purpose, to a degree at least, just at a time when peculiar conditions made unusual requisitions for information and advice. Our plans and purposes for the future involve the traditions of the past, coupled with more abundant service for the development of new lines which shall minister to the development of the State and the prosperity of the individual, and in such undertaking we bespeak the co-operation of all old friends and welcome the participation of new friends. It is a time when agricultural success depends, as never before, upon the fullest knowledge of principles and practices and materials, and in all these, especially in their adaptations to California effort, the RURAL PRESS is conceded leadership, which is very encouraging and inspiring to all who take part in its publication.

CHEESE FOR THE SOLDIERS.—Congressman J. H. Davidson of Wisconsin has introduced a bill in the House of Representatives providing that pure, wholesome cheese shall hereafter constitute a portion of the ration of our soldiers. Such a measure is timely and important, for cheese is one of the cheapest foods available to man. It is condensed, has no waste, requires no preparation for consumption and is peculiarly suited for nourishing soldiers in their fatiguing labors in a tropical climate. Every person interested in dairying is urged to write at once to his Member of Congress in both houses, urging their immediate support of the Davidson bill. If our dairymen will do their duty, Congress will no doubt enact the Davidson bill into a law within the next two weeks, in time to render our soldiers now in the field a genuine service.

ENERGETIC efforts are being made in Victoria and New South Wales to secure the cultivation of sugar beet on a remunerative basis, and in the former colony the Maffra Sugar Beet Company, with a capital of \$250,000, has been formed, the Victoria Government giving assistance to the extent of \$50,000. The buildings for the manufacture of sugar are being completed, and a technical staff engaged in Germany, the area already under cultivation for beet being about 1700 acres. In New South Wales an attempt is being made at Tenterfield to form a company with a capital of \$500,000 for a similar purpose.

QUERIES AND REPLIES.

Grasses for Sands.

TO THE EDITOR:—Can you give me the name of grass that will grow in almost pure sand? I have a large quantity of this kind of land that grows worthless brush, greasewood and a poor little growth of manzanita. If I could know of a quality of grass that would grow on this kind of land, that cattle and sheep would eat and be supported by, it would be a great help to me to get something useful from this land.—D. J., Monterey.

What grasses promise best in almost pure sand depends on whether you have interior or desert sand or shifting sand of the seashore. The desert sand is more trying in point of dryness of earth and air; the shore sand is trying because of its shifting, which uncovers the roots or buries the tops, either of which few plants can endure.

The fixing of the shore sands is shown to be feasible if one has patience and money by the experience of the Golden Gate Park under the superintendence of Mr. John McLaren. Some years ago he introduced the sea-bent grass of Europe—*Psamma arenaria*—and made a notable success with it. Before that all sorts of devices were tried for the reclamation of the shifting sand dunes, of which the area of the Park was almost wholly composed. Grain crops were put in and nearly all varieties of grasses, with but little success. What was evidently wanted was a grass with roots of a long, fibrous nature to hold the sand in place. Yellow lupins were tried and yielded fair success, but did not seem to take sufficient hold. The sea-bent grass gave more satisfactory results; its strong, fibrous roots took firm hold and, shooting out its sinewy rootlets, it seemed to grasp the moving sand and hold it like a vice. It took four years, however, before it was thoroughly successful, and then, under its shelter, other plants were enabled to get a rooting and the shifting sands became covered with verdure.

As for interior sands of desert character, it is not possible to make such specific prescription. The problem is, on the whole, harder perhaps; but it is now being more persistently attacked by agrostologists than ever before and experiment is proceeding on the line of studying desert flora with a view of distributing plants which are to the manner born in this country. Most promise now seems to be vested in the species of *Bouteloua*, such as Grama grass and Buffalo grass. The Division of Agrostology of the U. S. Department of Agriculture at Washington is systematically collecting and distributing this seed, and the University Experiment Station at Berkeley included some of them in its seed distribution last fall and will probably repeat its offer the coming autumn unless this summer's drouth prevents seeding.

There is a grass growing in the Colorado desert of California which is called "gietta." It is *Hilaria rigida* and grows only in desert situations. It is said to be excellent fodder, although it is hard and brittle. Such must inevitably be the character of desert grasses probably. Teamsters on the desert cut gietta with a hoe and make it into bundles which are roped to the ends of their freight wagons and taken along in case their other forage should give out. Seed of this plant could probably be obtained from southern California botanists who make frequent excursions after desert flora, and it should be given wider trial.

Squash Bugs.

TO THE EDITOR:—Will you tell me something practical to do for the squash or pumpkin bug? They have just made their appearance on my melon vines and have killed a few vines, and, I think, would kill them all if let alone. Since there will be a sale for melons, I would like to save them. I am killing them with a paddle, but may not be able to kill them fast enough, as they multiply amazingly fast.—SUBSCRIBER, Red Bluff.

These insects cannot be poisoned because they are suckers, not biters. They can be killed by kerosene emulsion sprayed upon them. Take common laundry soap, $\frac{1}{2}$ lb.; kerosene, 3 pints; water, $4\frac{1}{2}$ gallons; cut up and dissolve the soap in 6 quarts of boiling water in a 5-gallon oil can. Remove from the fire and add the kerosene and stir vigorously for ten minutes. This should make an emulsion from which the oil will not separate when cool. Add cold water to fill the 5-gallon can and apply (from time to time as needed) to the insects and plants with a garden syringe or

spray pump, and it will kill all insects which are covered with a film of it. A repellent is often successfully made by stirring one tablespoonful of kerosene into a quart of fine road dust and scattering it on and around the plants.

Can Fern be Killed by Cutting?

TO THE EDITOR:—I have some canyons in the pine woods adjacent to Monterey that give good pasture in the middle of the canyon, but on each side of the canyon, where the land is still very good, and would grow a good crop of grass if it were not for the crops of ferns that cover the ground and keep the grass from making a good growth, I would get much more good pasture feed for my cattle. Wherever the ferns grow is uncommonly, extra good soil, but the ferns are a great detriment to the growth of abundant grass feed. I make a special effort every fall, when the ferns are withered and dry, to utterly destroy them by burning them up. But the next spring, and the next spring after that, they keep coming as if they had never been burnt off. Can you tell me if there is any time during the year, while they are growing, that I can scythe them down, even if I have to cut them twice during the summer, that will help to prevent them from growing from the roots again?—D. J., Monterey.

This passes our knowledge. Can any reader answer from experience? If there is any joint in the harness of a fern where a scythe can get in effectively, it must be at the time of its rankest growth, and that would vary somewhat with the locality. Burning off the top after the growth is dry has only a temporary effect, as our correspondent has learned.

Sorghum Fodder.

TO THE EDITOR:—Can sorghum fodder be cured in the same manner as corn, and is it as good, or better, in this dry condition as green? My experience with pea fodder is that stock prefer it dry, but I have had no experience in feeding sorghum.—W. M. BRISTOL, East Highland.

Sorghum fodder can be cured in exactly the same manner as corn fodder. When the intention is to cure it for hay, it should be sown thickly, so as to furnish thinner stems, and cut with a mower. Quite a full account of this practice was given in the *RURAL* of March 26, 1898. We never heard it intimated that it was better dry than fresh. If it is allowed to grow too large or to stand too long, it is ever so much worse dry than fresh. The pea vine is different, and probably its distastefulness to some animals is due to its rank flavor in a green state. We notice that our chickens are crazy over milk thistles and eat every fragment of the stem, as well as the leaves, but they will never take two bites at a fresh pea pod, which seems to us delicious. In our opinion, the hen refuses the pea pod for the same reason that the donkey eats the thistle.

Treatment of Almond Trees.

TO THE EDITOR:—We have a 50-acre almond orchard at Winters, and on account of the dry season thought of thinning out the branches as we do when pruning in winter. The trees at present look thrifty and have made a good growth this season. They are five years old.—BUCKINGHAM & BOYCE, Winters.

As your trees have made a good growth and still have a thrifty look, the probability is that they will pull through all right if the ground is kept well cultivated. Thinning the branches is, however, an additional surety to that end and will also exert an influence toward the bearing of a crop next year.

Gopher Killing.

TO THE EDITOR:—Gophers are unusually bad this year in the orchards and are killing trees. I am told that it is a good plan to uncover the root crown and larger roots and apply coal tar to keep the gophers from eating the bark. Is this a good plan?—ORCHARDIST, Sonoma.

Do not use the tar; you will kill more trees in half a day than the gophers will eat up in a decade. Any kind of tar is death to bark, either of trunk or roots. There are four chief ways of fighting gophers. One is by the Pasteur virus, which is being widely tried this year and is promising so far as yet heard from. Another is to use the gopher traps of which an account was given in the *RURAL* of Sept. 4, 1897. Another is the carbon bisulphide, but that is more effective when the soil is moist in the winter time. Probably the most widely used way is the poison route. Take raisins, and insert into the pulp of each with a knife blade a few crystals of strychnine. Wherever gopher marks are seen dig and open the hole and poke a few raisins in the hole on each side of the excavation. Cover with clods so as to exclude the light. This is a very effective way of poisoning.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 20, 1898.

By W. H. HAMMON, Station Director.

Except in the extreme northwestern portion of the State no rain fell during the third week in June. At Eureka the precipitation was more than double the normal amount, but elsewhere it was less than normal. The temperature was nearly normal. The week was good for haying, and much hay was cut. In some counties there are reports of a heavy yield of hay and grain of all kinds, all of an excellent quality. Second crop of alfalfa has been favored by the weather. Much Egyptian corn has been planted; fruits, excepting apricots and almonds, are generally in good condition. Peaches are better than expected. Cherries are plentiful. Grapes promise a very large yield, especially raisin grapes; some Muscats have dropped, either because of high winds or lack of vitality. Pears and prunes vary, being plentiful in some sections and scarce in others. Apples will make a heavy crop. Honey is reported a failure in some counties. Beets, potatoes and all vegetables are doing well.

SHASTA.—Light norther. Haying over; harvesting. TEHAMA.—Harvesting. Weather favorable and crops good. BUTTE.—Harvesting. Light work for combined harvesters and poor returns. Many large fields of barley and wheat will not bring more than seed. Feather river, 4 inches below low water of last season. GLENN.—Wheat harvesting under way; yield better than expected and of fine quality.

YUBA.—Weather favorable for fruit and cereals. Harvesting commenced; yield variable. Shipping some fruit. YOLO.—Apricots scarce. Grain harvest over. Heavy yield of grapes.

SACRAMENTO.—Favorable weather for fruit. Good wind for irrigating. Promising outlook for a large crop of grapes. Early peaches going to market rapidly. Blackberries coming on. Baling hay. Harvesting commenced.

SOLANO.—Winter sown wheat a failure; summer-fallowed yielding an average of twelve sacks. Grape crop will be large. Prunes and peaches doing well. Very few apricots.

PLACER.—Good fruit crop. Cherries nearly gone. SAN JOAQUIN.—Grain ripening rapidly, and much will be cut in the next ten days. Vegetables of every kind doing well. Planting pumpkins and beets.

STANISLAUS.—Harvesting barley; wheat to follow. Outlook good for second crop of hay. Grapes look well, and much late fruit coming.

MERCED.—Harvesting progressing rapidly; grain good; fruit likely to be good. Hay all cut except alfalfa. Grapes promise a heavy yield.

FRESNO.—Excellent weather for growing crops of all kinds. Some Muscats dropping because of high winds or lack of vitality. Indications of a full crop of raisins. Fair amount of water for irrigation. Alfalfa doing well. Much Egyptian corn planted. Harvesting has begun, but outside of the sub-irrigated section, the yield is indifferent. Good yield of barley.

KINGS.—More wind than usual at this season. Grapes have fallen some, but there is still a heavy crop of raisin grapes. Cool weather will make wheat fill, but will hold back alfalfa.

TULARE.—Plenty of water for irrigation. Running water on wheat lands. Harvesting begun; crop light but of light quality.

KERN.—Many stock hogs shipped East on account of scarcity of grain. Grain harvest well under way. One-fourth of a crop on dry lands and full crop on irrigated land. Grain hay will fall short of last estimate, as some of it will make grain. Full crop of raisins.

LAKE.—Rain did no damage to cut hay, though much grain was lodged. Hay and grain of all kinds will yield the largest crop for years and of excellent quality. Heading will begin on the 20th. Second crop of alfalfa much benefited by the rain. Peaches are better than supposed. Prunes are almost too thick. Pears are light; apples heavy; grapes excellent.

SONOMA.—Haying, and a better yield than expected. Small crop of peaches and apricots; large crop of prunes; fair crop of grapes. Berry crop unusually good.

ALAMEDA.—Cherries coming on fast. Apricots and peaches are light crops. Haying. Grain filling but crop light.

SANTA CLARA.—In some irrigated orchards the leaves of the trees are turning yellow and falling. In some orchards trees may die if water is not supplied. Cherries plentiful. All fruits good except apricots. Haying over. Grain harvest will begin soon.

SAN MATEO.—Warm. Haying finished. Beets and prunes doing well.

SANTA CRUZ.—Hay crop fair; fruit also fair. SAN BENITO.—Several hot days. No damage to fruit. Haying finished; one-tenth of a crop.

MONTEREY.—Dry and windy. Early peaches ripening; of average size, but fine flavor. Haying nearly completed; fair crop. Beets and potatoes doing well.

SAN LUIS OBISPO.—Cool, foggy weather improved summer crops. Fruit has stopped falling. Hay not scarce. Wheat and barley have failed on dry lands, but made excellent crops on irrigated lands. In the Arroyo Grande valley much hay will be cut and some grain threshed.

VENTURA.—Hot winds injured beets and beans, and where planted in poor, moist land the returns will be poor, unless weather is favorable. Crops on irrigated lands are not hurt. Apricots on irrigated land will not be larger than marbles. Haying about half finished; grain heading. No honey.

LOS ANGELES.—All fruits doing well; picking and drying apricots; no oranges moving. Light crop of grain; harvesting hay, also alfalfa hay. Corn crop light, but growing nicely. Walnut trees doing well; oranges look well.

SAN BERNARDINO.—Warm weather ripening apricots and cherries rapidly. Canneries open for deciduous season. ORANGE.—Grape vines looking well; apricots ripening; heavy crop of peaches, prunes and walnuts. Farmers making hay.

RIVERSIDE.—Hot, dry weather. Second crop of alfalfa being harvested; good yield. Drying apricots; oranges moving rapidly; peach crop promises to be large.

SAN DIEGO.—Small fruits somewhat retarded by cool weather.

The following data for the week ending 5 A. M., Wednesday, June 22, 1898, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

| CALIFORNIA STATIONS. | Total Rainfall for the Week. | Total Seasonal Rainfall to Date. | Total Seasonal Rainfall Last Year to Same Date. | Average Seasonal Rainfall to Date. | Minimum Temperature for the Week. | Maximum Temperature for the Week. |
|----------------------|------------------------------|----------------------------------|---|------------------------------------|-----------------------------------|-----------------------------------|
| Eureka..... | .32 | 35.03 | 50.74 | 47.18 | 50 | 76 |
| Red Bluff..... | T | 15.13 | 25.42 | 26.49 | 56 | 92 |
| Sacramento..... | .00 | 10.39 | 17.32 | 20.91 | 54 | 92 |
| San Francisco..... | .00 | 9.38 | 23.43 | 24.85 | 51 | 72 |
| Fresno..... | .00 | 4.95 | 10.52 | 9.97 | 54 | 104 |
| Independence..... | .00 | * | * | * | 64 | 94 |
| San Luis Obispo..... | .00 | 7.20 | 20.75 | * | 46 | 88 |
| Los Angeles..... | .00 | 7.05 | 16.86 | 17.34 | 56 | 80 |
| San Diego..... | .00 | 4.99 | 11.78 | 10.40 | 58 | 70 |
| Yuma..... | .00 | 1.66 | 5.35 | 3.05 | 66 | 110 |

* No record.

HORTICULTURE.

The Walnut Disease.

We are glad that Prof. Newton B. Pierce of Santa Ana, assistant pathologist of the Department of Agriculture, has outlined his conclusions about the disease which is seriously affecting the walnut in various parts of the State. He has prepared for the *Rural Californian* a statement on the subject.

Walnut Bacteriosis.—The disease of most interest at this time to the walnut growers of California is that known as walnut bacteriosis. It is a disease capable of affecting all of the tender and rapidly growing parts of the tree of the Persian walnut, such as the twig, leaf and fruit. It is induced through infection by and development of a specific micro-organism, a cryptogamic vegetable parasite belonging to the group of bacteria. This organism or germ is in its simplest form a short rod-shaped vegetable cell only about one and one-half times as long as broad, commonly seen in pairs and occasionally united into thread-like chains. The individual germs are actively motile when placed in fluids, as water, potato extract, etc. Their motility is due to the possession of polar flagella, often much longer than the germs themselves, and which by waving movements in the fluids serve to propel the germs with considerable rapidity, considering their microscopic size. Like other bacteria, the walnut germs increase in numbers very rapidly by a process of elongation and division (fission). Under favorable conditions a single germ may increase to over a thousand billions of germs in twenty-four hours.

The walnut organism has been grown on a large number of artificial culture media, both liquid and solid. It grows very rapidly upon starchy vegetable tissue, such as steamed potato, upon which it presents a light yellow color and develops rapidly.

How It Affects the Walnut.—The injuries which this germ effects upon the new shoots, the leaves and the nuts of the walnut are brought about through its ability to secrete chemical ferments or enzymes. One of these ferments is similar to that found in germinating barley, a diastatic ferment capable of converting starch into grape sugar. Another is a peptonizing ferment, an agent capable of converting the proteids into peptones. By such chemical action upon the tissues of its host the organism is capable of breaking down the tissues and altering the cell contents. These liquid chemical ferments increase in quantity as the germs multiply, soaking outward in all directions from the point of infection, acting upon the cells and their contents in a manner to prepare them as nourishment for the multiplying and spreading organisms. By examining affected branches or nuts when the disease is actively spreading, narrow bands of tissue having a watery or water-soaked appearance are found to lie between the blackened center of the diseased spots and the healthy surrounding tissue. This encircling watery tissue represents the zone of cells being acted upon by the chemical ferments. By means of these ferments this organism is capable of destroying the tissues of the hull, shell and soft kernel of growing nuts. Upon the leaf it destroys the soft parenchyma of the blade and very commonly considerable portions of the veins as well as the stalk or petiole. Upon the branch the germs destroy all tissues inward to the pith, if the shoot is still tender.

How the Disease Is Communicated.—Infection may take place at almost any tender and rapidly growing portion of the nut, leaf or branch. Older tissues are not likely to be injured. That form of infection of the nut which causes the greatest percentage of loss is what may be termed blossom infection. In this case the infected spot first becomes observable at the blossom end of the young nut, close to the base of the floral organs. At first a water-soaked spot is apparent, which later shows a black central point surrounded by a watery margin. Often a minute drop of decomposed tissue filled with millions of the walnut germs breaks out at the center of infection, and this, when dry, forms a minute scab-like flake resembling a small scale insect. By cutting across the end of a young nut at this stage of the disease the water-soaked tissue within will indicate how far the ferments have acted upon the tissues. At a somewhat later stage it may be found that the organism has entered the jelly-like kernel of the nut and is rapidly digesting it. At this time the interior of the membrane of the kernel may contain almost a solid mass of this specific walnut organism. Later, however, when more decomposed, the nut may harbor various species of bacteria of decomposition. Lateral as well as blossom infection of the nut takes place. In the case of blossom infection a large percentage of the nuts falls when small or before they are half to two-thirds grown. With lateral infection the loss is less severe, and if the infection takes place late in the season the loss will be less, owing to the hardening of the tissues and the consequent inability of the ferment to decompose the hull and shell.

Can Attack Healthy Nuts.—The ability of the walnut germ to induce infection of the nut without the

aid of insect punctures or mechanical injury of the tissues has been ascertained. Pure cultures of the organism growing upon potato have been added to sterile distilled water in an atomizer and sprayed upon hundreds of healthy walnuts. These nuts have thus contracted the disease in a typical manner, while unsprayed nuts on adjoining limbs have remained healthy. In many cases hundreds of infected points have developed upon single nuts thus sprayed, and these infections have been confined to the sides of the nuts so treated.

Heavy dew or fog resting upon the nut, branch or leaf will favor the germ in inducing infection and aid in its distribution. All bacteria also requires moisture for growth as much as the higher plants. With the walnut germ it is possible, it is believed, for it to use the wet surface of the walnut tissue as a means of enabling it to swim directly into the stomata or pores of the plant, where the moisture conditions for permanent and rapid increase would be found.

Winter Habitat of the Germ.—The walnut germ winters in diseased branches of the tree, often in the moist pith cavities lying below diseased spots. It also winters in fallen nuts beneath the tree, and probably upon fallen leaves and upon the soil.

The most prolific sources of germs for the first spring infection of the new growth of the tree are apparently the centers of disease remaining on the branches during the winter. The warmth of spring brings about a renewed growth of those germs living through the winter. Many of these are apt to fall from diseased branches upon the newly opened leaves. Here the conditions are such as to favor rapid increase, and the new growth and nuts become more or less generally infected.

Treatment.—In the treatment of this disease the manner of spring infection should be most carefully considered. An effort should be made to remove as completely as possible the prime sources of this early infection. The fallen nuts and leaves should be plowed under deeply or gathered and destroyed. The tree should receive careful pruning to remove all diseased parts. Besides these two essential considerations it may be thought well to spray young trees in the winter with the Bordeaux mixture for the purpose of disinfecting the tree as perfectly as possible. Twenty acres of spraying experiments conducted with this spray in the manner indicated showed a saving of one-half, i. e., there was, on an average, twice as many diseased nuts fell from the unsprayed trees as from those thus sprayed.

A Study of the Navel Orange.

Prof. W. W. Bailey of Brown University has been attracted by the character of the Navel orange and outlines for *Meehan's Monthly* his conception of the way the Navel orange came to be as it is. Prof. Thomas Meehan gives the outline his approval as undoubtedly correct, and it therefore will be acceptable to our orange growers who have an analytical cast of mind.

A Seedless Fruit Not Marvelous.—The so-called Navel orange is a delight; it is also a curiosity. Its external aspect at once attracts attention, and is now familiar to everyone. But it is the interior that especially excites wonder. We are frequently asked to explain its construction. We will venture to give our own idea of it, premising that this hypothesis may not be the correct one. It need not excite our marvel that it is seedless. That condition is usually the result of long continued cultivation and selection. Many other fruits—as, for instance, the banana—show the same, or nearly similar, deprivation. In the banana, as generally seen, minute specks alone represent the seeds. Indeed, these in their perfect state are rarely seen except in some far eastern islands. The plant is propagated by offshoots or cuttings.

It must be borne in mind, in this connection, that very many plants manifest two modes of reproduction—that by the seed and that by some form of budding. Hence all the processes of layering, grafting, etc.

Structure of the Fruit.—So much for the first point; the second is not so easy to demonstrate. It will be recalled that in the Navel orange we have, as it were, one fruit within another, like a succession of telescopic pill boxes. The inner, as well as the outer, may have a rind, but usually it does not. It varies much in size, and of course is, by situation, smaller. Again, the smaller it is the better the regular fruit, for the interior berry is rarely as juicy and luscious as the outer.

We attribute the inner berry to supernumerary carpels. To explain, we will say that the generally accepted theory of the formation of the pistil of a flower is that it is composed of one or more metamorphosed leaves. If it is a simple pistil, there is but one such leaf or carpel; if compound, there are two or more carpels. According to the way in which these leaves or carpels fold and touch, there results a one, several, or many-celled ovary. The last is the condition in the orange as represented by its segments.

How It Differs From Other Oranges.—The cross-section of an ordinary Messina or Valencia orange

shows these parts radiating like the spokes of a wheel from a common center or axis. Now, the whole flower, of which the pistil is the central part, is but a branch (a conception which we owe in part to the poet Goethe), and the carpels are peculiar leaves of that specialized branch. We take it that in the Navel orange the branch or shoot continues to grow, producing another tier of carpels above or within the first set. The lower set is more vigorous, presses upon and crowds the inner, forming, at last, the characteristic dimple or navel which gives the fruit its name.

Such proliferation of a flower branch is seen any day in the two or more storied inflorescence of Chinese primroses, or in the still more striking cases where a cherry, rose, or apple blossom continues a leafy shoot through its middle.

Could we but observe the flowers of the orange from bud development, it would be possible to tell how nearly correct is this tentative explanation.

Dieback of the Apple.

TO THE EDITOR:—What ails my apple trees? In an orchard of sixty trees there are half a dozen which do not leaf out freely at the top. They have exactly the same soil conditions as the others and are situated in different portions of the tract. The trees are three years old. Most of the affected trees have shown the symptoms mentioned almost from the time of planting, although they have made nearly the same growth as the rest. The trouble is not confined to any one variety, although commonest among the White Winter Pearmain. Even after the leaves have finally come forth, they are not as large and vigorous as they should be. Can you diagnose the case and suggest a remedy?

East Highland.

M. BRISTOL.

We have seen cases of this on our own trees where it seemed clearly due to the powdery mildew, which attacks the young growth at the ends of the shoots, and the following year such shoots would act as Mr. Bristol describes. We believe the dieback of the apple, as of other fruit trees, is often due to root trouble. The best preventive for the powdery mildew is dry sulphur thrown or blown upon the new growth. The best practice with the weak shoots, from whatever cause, is to cut back to strong growth.

Quassia Tea to Protect Foliage and Bark.

TO THE EDITOR:—Some time since I wrote asking for a remedy to prevent my poultry eating the leaves and bark off the peach trees, and was advised to use a wire screen or quassia chip solution. As I had handled quassia solution on a commercial scale, I felt sure that would answer the purpose, and it did. The fowls would seldom take more than the second bite. I used a spray pump and sprayed it on the lower part of tree and trunk. I made the solution as follows: Quassia chips, two pounds to one gallon of lukewarm water; let this soak forty-eight hours; strain off the liquid and add one-half gallon of fresh water to the chips and boil down to one quart; draw this off and mix with the first water. You have then a solution bitter enough to satisfy the most exacting. This extract is poisonous to flies and insects, but, in small doses, it is not harmful to persons.

Hanford.

W. C. MACFARLANE.

This experience will be widely useful. The quassia solution is not only useful for keeping off poultry but for protecting tree-bark from rabbits, sap-suckers or other invaders. It has often been prescribed in the *RURAL*, but the definite formula which Mr. MacFarlane gives for its preparation is new, and should be remembered.

CEREAL CROPS.

Influence of Straw Burning.

TO THE EDITOR:—During a recent trip in San Joaquin county I saw an object lesson that I think well worthy of careful study and investigation. In passing through the usually productive section lying east of Stockton, but which in this driest of dry seasons is almost a total failure, my attention was called to a field of wheat that was trying to head out at about one foot in height, while running through it there were occasional strips where the grain stood three feet high, fully headed and almost ready for the harvester, and all around it the grain was drying up without maturing seed.

I was interested to the extent of driving in and inquiring the cause and was informed that two years ago this land produced a good crop and was cut by a harvester and the straw was burned late in the fall in the rows where it had fallen from the machine. The following winter and spring it was pastured and last winter was seeded to wheat, and,

under favorable circumstances, would have produced a fine yield, but owing to the drought is a failure except as noted.

The question which suggests itself to me is what properties were returned to the soil in the ashes of sufficient value to represent the difference between success and failure this very dry season. I have noticed that the land in many places seems much more easily affected by the lack of moisture than formerly, and the thought occurs to me that it is being robbed of some element that causes it to lose its power to retain moisture.

Finally, I think the California farmer will have to wake up and do a little thinking, or we will not be able to keep up with the procession; and in this particular instance valuable information might be given us by some of our professors who are familiar with this line of thought and experiment.

San Jose, Cal.

W. C. ANDERSON.

Our correspondent's observations are well made. The concentration of the ash of the whole field's crop upon narrow strips enriches that strip and shows what could be had by systematic restoration of fertility in the soil. He is also right that the application of the ash would contribute toward moisture retention in the soil, as well as act as a stimulant to a vigorous growth of the plant while moisture was available early in the season. We certainly must look into and act upon indications of this sort if we are to keep up with the progress of events.

SHEEP AND WOOL.

A Day in a Southern California Shearing Camp.

Emma Seckle Marshall has been visiting with pencil and camera a southern California sheep camp and gives the *Chronicle* an interesting account of life amid such environment.

In Pauma Valley.—It was my recent good fortune to visit a camp in the Pauma valley, in the mountains of San Diego county, about thirty miles from Oceanside. This valley has an interesting past, and some of the events which made early California history were enacted within its limits. The Pauma grant of three leagues was given to J. A. Serrano by the Mexican Government, but as has been the case with so many of these grants, there has been more or less litigation ever since, and the broad acres have never been cultivated.

The ranch house stands in the middle of the valley, and though it bears the name "Pauma Hotel," painted in big black letters on the front of the building, it possesses little of the appearance and none of the conveniences of a hostelry. On every side the land stretches away toward the mountains and the river, uncultivated yet to the highest degree fertile.

The shearing camp is not always in the same place, but usually at a point which is convenient to the section where the largest flocks are grazing, and here the bands are brought, shorn and sent out to the range again.

During our visit from fifteen to thirty Indians were shearing at the rate of between 500 and 1000 sheep a day, and each band embraced from 100 to 200 head. If the rush is great more shearers are engaged and the rivalry becomes even more intense.

Several connecting pens had been built for the occasion. In one of them the sheep waiting to be shorn were kept; in another the lambs were inclosed, and into a third the shorn sheep were driven. There was, besides, a small inclosure which held only as many as the men could shear at once, thus avoiding the trouble and confusion, to say nothing of the loss of time in separating the few from the many when the shearers had finished with one lot.

Driving.—When either corral, or pen, was to be filled the air was full of dust and shouts and expletives, the frantic waving of arms and prodding with sticks, and the result was a stampede of frightened sheep driven by a lot of men who seemed for the time being, if one judged by actions, raving maniacs. It was as if pandemonium had broken loose, but each man returned to his task the moment the pen was filled and quiet reigned again save for the babel of tongues speaking a language that was strange to us.

Shearing.—The shearing was done in the shade of a wide porch and it seemed to me that the shears could not possibly last more than a season, so frequently were they sharpened. The Indians were stalwart, rather intelligent-looking fellows of all ages and they handled the sheep as if they were bags of wool, pulling and hauling them as the shears gilded with clicking sounds through the closely knitted fleece.

Photography.—It is the aim of each man to remove the fleece in one piece, and he who can shear the greatest number of sheep leaving the fleece intact is considered the most expert, and the desire to excel is just as strong a characteristic of these Indians as of their white-skinned brethren. Hence, anything that retards their labor is regarded with disfavor,

and I am free to confess that when I set up my camera, focused it, and then asked them to cease work for the fraction of a second there were vigorous protests and wagging of heads. I expostulated and they parleyed, until time enough to take dozens of pictures had been consumed. It was only on the promise of a picture to each that at last two of them brought their sheep out into the sun and the rest were absolutely quiet for the fifth of a second.

Then a desire to be photographed seized the whole crowd and only the limited number of plates I had taken prevented the shearing from being brought to a complete standstill and me from being bankrupt. When the plates had all been exposed each and every man wanted to look through the camera and one of the number obligingly posed.

The first man looked long and silently and then stood aside with an expression of disquietude upon his solid brown face. The next enveloped his head in the cloth, but withdrew it immediately, saying:

"Something's the matter with my eyes, they make him stand on his head."

The face of the first man cleared and explanations were in order. Probably these men had never had so novel an experience before.

The wool is packed in burlap bags about 6 to 8 feet long, which are suspended in a framework made for the purpose. As the wool is sheared it is thrown into a pile and an Indian gathers it up by the armful and tosses it to a man who stands on the top of the framework, who, in turn, drops it into the bag and occasionally jumps in himself in order to stamp it down.

Sitting for the Pictures.—As this man was a huge negro, I thought he might object to being photographed with the Indians, so I caught him unawares with a snap shot, but he divined what I had done and insisted upon the picture being taken over again in order that he might pose properly. The old saying, "One touch of nature makes the whole world kin," recurred to me frequently during that experience. While arranging the men for a picture that would take in the front of the house before which the great bags of wool were piled, one of the sheep-owners placed a vase of flowers (which must have been brought from a distance, as there were no flowers of any kind in the vicinity,) in an upper window, and when told that it would not show in the picture he seated himself upon the pile of bags with his beautiful white sheep dog across his lap and the roses held above the dog's head.

About 11 o'clock the men ceased work and repaired to the kitchen, where several Indian women presided and each one secured a plate and a cup. A huge iron pot was suspended over a campfire, and savory odors emanated from it; near by an immense coffee pot sat on some live coals, and the men helped themselves from it, then filled their plates from the pot by means of a long-handled ladle. This scene was certainly typical of "pot luck."

The school over in the little Indian village of Pauma, a couple of miles distant, was decimated, for the boys were all loitering around the sheep camp. The shearers come from various parts of the adjacent country, and the addresses given me were many miles distant not only from each other but from the camp.

As fast as the flocks of one man are sheared those of another are brought in, thus extending the shearing season over several weeks sometimes. Perhaps next year the camp will be miles away, but the same band of Indians will be there and the same scenes will be enacted.

Close of the Shearing.—I was fortunate enough to visit the place again the day the shearing was completed. As the last burr-matted, dirty fleece dropped to the ground from under the bright shears and was tossed upward to the packer and stamped into place and the bag was cut down, sewn up and put into the wagon for transportation to the railway station more than twenty miles distant, and thence to the mills, the scene changed as if by magic.

The air was rent by a series of lusty shouts and a rush was made for the horses tethered by the river bank, where the wild clover was lush and thick. Half a hundred Indians each quickly loosed his animal wound up the riata and sprang into the saddle to take part in an impromptu race, while the remaining men were hastily removing all traces of the week's labor and getting the big bare rooms into condition for the dance in the evening, and the feast to follow it, when every man would put his best foot forward and every brown-faced girl would be gowned in her best and brightest.

Numberless dogs zealously guarded the sheep, who roamed the plain and the adjacent slopes, happy in being relieved of the heavy matted fleece, and the lambs, whose turn will come next year, frisked with the joy of being released from the crowded pen.

It is no uncommon sight to see Indian women sitting by the streams washing and turning and washing again the dirty wool until it becomes as white as snow, after which it is dried and pulled and made into the most luxurious mattresses.

Shearing over, the placid uneventful lives will go on until next spring brings the shearing time again, when the men will desert the villages and the "dobs" and tule huts scattered along the foothills for the excitement and unwonted labor of the sheep camp.

TRACK AND FARM.

On a Draft Horse Foundation.

We have had several articles by prominent American breeders proceeding upon the basis of the French coach horse. In view of the fact that so many have been proceeding on a draft horse foundation for years back it is interesting to see what can be said on that side. Mr. Robert Burgess shows in the *Breeders' Gazette* that that road is promising providing it is well used.

Best for the Average Farmer.—For the average farmer the horse of all horses to grow for profit is the large, sound, well-bred, well-fed and well-broken draft horse. Let me not be misunderstood. I say for the average farmer—the farmer who has work on his farm for a horse of this kind; the farmer who has no taste for a horse that requires a great deal of training, or who, if he has the taste, does not have the time to give the training; or, if he has both the time and taste, does not care to have his boys get the fast-horse fever. There are farmers who prefer to grow the roadster or hackney; their taste runs in that way. They are skilled in training horses; they can do as much work on the ordinary farm with these as with a heavier horse, and with more satisfaction; and when it comes to going to town there is no comparison. These men should gratify their taste, but the average farmer will prefer the draft horse. The farmer of this class who took my advice in 1894, and kept right on breeding and growing colts of this kind, can well pat himself on the back now. If there has not been much money in it the past few years, it is in sight now. An advance of 35 to 50 per cent in the last year is encouraging to an industry that was supposed by many to be past redemption.

Mistakes to be Corrected.—But if money is to be made in the future there are some mistakes of the past that must not be repeated. The draft horse industry received its greatest benefit by using the first-class imported horses, but on the other hand there were imported a great deal of "truck," deficient in size and formation and liable to become unsound the first opportunity. It was natural that such a mistake should be made, because importers were inexperienced and anything that would make a profit was imported. It was natural that the farmer should purchase and patronize that kind of horses. In the West especially he was without experience and, like all inexperienced men, made mistakes. It was but natural that he should use brood mares inferior in size and unsound, because large profits were promised and he was inexperienced in the business, and hence easily lured to a serious mistake. It was natural, but not reasonable or sensible. These mistakes should be avoided in the future.

False Hardiness.—Other farmers had the foolish idea that a horse to be hardy must be used to hardship—must have the run of the stalkfields in the winter, must learn to live on little and stand cold and heat, hunger and thirst, and thus become tough. They did not realize that large horses cannot be grown in any country in the world without liberal feeding, and especially from weaning time until three or four years old and the frame is fully developed. This "sparse keep" changed the draft horse into a plug or a chunk, and knocked anywhere from \$25 to \$100 off his price. That mistake must not be repeated if we are to make money on the draft horse.

Good Mares.—There are two difficulties in the way of growing the kind of draft horses that must be grown for profit. One is the scarcity of really good, sound, weighty mares of sufficient size and good breeding. Where a man could pick up a half dozen brood mares of this kind a few years ago he can scarcely find one now; we have slid back and will have to grade up again slowly but, let us hope, surely. A second difficulty is the sires through the country of sufficient size and quality are seldom to be had, while many importers and breeders have gone out of business. There are a few who have had faith, have kept their best, kept growing right along as though nothing had happened, confident that time would vindicate the wisdom of their course. These men will make a pile of money. I wish it was twice as much—not for their sakes, but for the sake of the public, who will need the best their studs can furnish and twice as much as they can supply before we write 1900 on our letter heads. This may seem an optimistic or too hopeful a view, but we ask the readers to think it over and then mark the place, and see whether when 1900 comes I am not right and have not given good, sound advice.

Worthless Horses.—There will be no revival in the horse business for stock which the world does not want, such as streeters, undersized and ill-formed of any kind. The demand for these will be met by the range at prices that would be ruinous to the farmer. There will be no profitable demand for unsound horses of any kind. There will be, in my judgment, a good demand both at home and abroad for the good, sound horses I mention, and good money to the farmer who will set about producing them during the present season, as between 1000 and 2000 have been leaving this country for Europe every week.

THE POULTRY YARD.

Pacific Coast Poultry Interests.

Frank W. Breed of Oakland, a prominent poultry man, has prepared a very interesting sketch of our local poultry production and the opportunity which exists of saving for our own pockets the vast amount which is paid for eggs and poultry which are rail-roaded over the Rocky mountains to our coast. The sketch is from *Gray's Poultry Culture* and is worth the widest circulation.

The Poultry Interest.—At present no industry in the world offers the field for development introduced by poultry culture. It is the youngest and already one of the leading agricultural pursuits of the nation. If statistics accumulated by those who are deeply interested in its development can be relied on, the gross earnings of the chicken industry for the year 1897 far exceed those of any other agricultural pursuit in which the skill of American enterprise is striving to erect a shrine to Mammon. The nearest approach to the \$290,000,000 earned by the American hen last year is offered by the total value of milch cows, they representing an investment of \$263,955,545, closely followed by the entire cotton crop, valued at \$259,174,640, with wheat, the money standard of the farmer and the breadstuff of the nation, a weak fourth with its offering in round figures of \$238,000,000. Thus you and I find by a comparison of figures this ruinous combination of beak, claws and feathers, roosting on the buggy top or wood pile at night, and by day industriously eliminating all signs of the toil and application of a hard-earned week's vacation in the neighbor's new garden, represents the greatest money-making branch of agriculture, and agriculture is the chief source of this nation's wealth. My friend, did you ever consider what this means? Did it ever occur to you that this much-despised hen and the men who admire her, commonly referred to as "chicken cranks," cut as big a "figure" in the enterprise of the nation as they do?

A few years ago, or before I began to look into the commercial side of the poultry industry, had a man told me the despised barnyard hen was a bigger money getter than our great expanse of wheat fields, I would have looked on him with pity. The very idea of such a thing would have been ridiculous, and he would only have had to add that her gross earnings for a year amounted to more than the total value of all the milch cows in the country, to make he and I forever strangers. I hate to be made a fool of.

On This Coast.—But I know this question has already come to your mind: What if her gross earnings do amount to \$290,000,000? Where is there anything to be made by the men and women on this slope who wish to embark in such an undertaking, with feed as high as it is and eggs selling for the ridiculously low figures of two dozen for 25 cents? Before I answer, or try to answer that question, I am going to come nearer home, as it were, taking up the points of the industry as shown by the market reports of our own State, and in order to do this, again we must resort to figures.

Last year California sent out of her borders \$3,000,000 cash in exchange for eggs, the bulk of them coming from beyond the Rocky mountains. Nor is this all. San Francisco supplies a market every week in the year for a carload of Eastern poultry (2500 chickens), gathered from the States of Kansas and Nebraska; and what is more, these chickens, shipped over 1000 miles to be placed on our tables, cost us more in the market per dozen than do the best raised in our own State, and as compared with the home product, are worth every cent asked. To the consumer, it is money saved to buy them.

My friends, you who are desirous of making money from hens, did you know this? Are we, who live in the most favored State in our Union, going to allow these importations to continue without striving to secure some of the profits derived from them for ourselves? For profits there are, or men would not be induced to risk their money in such an enterprise. You and I who talk home industry, where are we at?

Local Advantages.—The Pacific slope, with her balmy climate, has been rightly termed the poultryman's paradise, the Italy of America, for here, as in no other part of this great continent, are the conditions so favorable for his success. True, feed is higher and the cost of getting stock to market is a slight advance over that paid in the East, but aside from this everything is in his favor, save it may be experience. We do not have to contend against the rigors of an Eastern winter, for our fowls enjoy free range throughout the year, and a tight house of the cheapest material supplies their every want; whereas in the East expensive buildings have to be erected to accommodate the laying fowls in winter, houses that are frost proof and warm enough to keep water from freezing when the thermometer outside registers 20° to 30° below zero, if anything like satisfactory results are to be attained from a flock of hens. And during this period of confinement, which lasts from November to April, the cost of keeping, including care, etc., is nearly treble that demanded by

fowls on the range, with not nearly the returns in eggs. By this slight comparison of conditions it can be readily appreciated by the most disinterested reader that, climatically, the conditions for the propagation of poultry and its branches in the West are far in advance of the inducements offered in the East to embark in this growing enterprise. So that all that is really lacking to make this the greatest poultry center on the continent is an infusion of that "Yankee" shrewdness, pluck and attention, called enterprise. As soon as our poultrymen have some of this spirit injected into their make-up, this needless leak of the State's wealth will be stopped and instead of a market offered, another industry will be added to the long list of paying enterprises represented by invested capital.

Cost of a Hen.—And now as to the actual cost of keeping one hen one year. It has been said by those who know or rather pretend to know, a bushel of wheat or its equivalent will keep a hen one year. Experiments have shown it takes more than that amount to keep a healthy hen in normal condition that length of time and instead gives about seventy-three pounds as the correct amount, and on this standard I am going to base my figures, taking the market value of wheat to-day, the highest price of the year, rather than figuring out the average price during the last twelve months, as a standard by which to compute the cost of feeding one hen one year. Thus we find seventy-three pounds of wheat at \$1.60 per hundred will cost \$1.17. So much for the hen's keep. Now for what she will and can be made to do.

Yield of a Hen.—In several instances experiments in feeding have shown well-bred hens can and have been made to lay considerably over 225 eggs per year. In fact, this mark has been passed so often it is now considered that a healthy hen that cannot lay her fourteen or fifteen dozen eggs per year is not worth the room she occupies. But it is not my purpose to show here what a hen can be made to do, but what she will do if given a chance to earn her living. Every one at all conversant with the care and management of chickens will acknowledge that it is a very poor hen, one that it will pay to dispose of, that cannot lay 150, or in easy figures, twelve dozen eggs per annum. (Instances are known where individual hens have almost doubled this number in a year's time.) These eggs sold in the market at the average low price of 20 cents per dozen amounts to \$2.40. From this amount take the cost of her keep, \$1.17, and we have a difference of \$1.23, which, if we have managed carefully, should be net gain, for the amount her carcass will bring in the market at the end of two years, if rightly marketed, will more than pay for the cost of housing and incidental expenses.

Why Can't You Do It?—Now, to those who think there is nothing to be made from poultry, I ask you: Are not these honest figures? Are they in any way overdrawn? No one can say they are, for in figuring the cost I have taken the highest market prices, and the gains have been based on the lowest average market quotations. My friend, can't you see a way to keep a portion of this \$3,000,000, annually going abroad, in the State and call it your own? There are hundreds of men in the East who are making a good living and laying by something each year for a "rainy day" from the chicken business, and their country is not nearly so well adapted to the propagation of poultry as is your own. And now, right here, I ask you: If they can make it pay, can't you?

THE STOCK YARD.

Anthrax.

With the arrival of summer the usual outbreaks of anthrax, or charbon, as it is called in the South, are occurring among the live stock, notably cattle, horses, mules, sheep and even goats. The only practical and economical way of preventing an outbreak (according to the experience which has been given in our columns) is to protect the animals against the disease by using the Pasteur vaccine. This vaccine has been used extensively and successfully in Europe and Australia for the last twelve years—with so much success, indeed, that the losses from anthrax in those countries have been almost eliminated. So far as America is concerned, the Pasteur anthrax vaccine was first of all tested in 1894, with the usual satisfactory results, and during the last three years the Pasteur vaccine has been put to extensive practical use.

Preventive treatment for anthrax is of the highest importance, as owing to the contagious and fatal character of the disease there is no knowing how far its ravages may extend. As an example of the dangerous nature of anthrax, it may be stated that the disease broke out in Louisiana in the summer of 1896. Hundreds of animals died, and it required the vaccination of every susceptible head of farm stock within the infected region before the outbreak was controlled and finally stamped out. A significant fact in connection with this outbreak is that a number of planters who knew of the existence on their pastures of the germs of anthrax, or charbon,

had vaccinated their stock beforehand, with the result that they came through the epidemic scatheless, while the unvaccinated animals on adjoining plantations were dying of the disease. We cannot shut our eyes to the fact that the germs of anthrax do exist in some parts of this State, and it would, therefore, be an economical measure for the owners of live stock located in infected regions to protect their animals against anthrax by using the Pasteur vaccine.

THE IRRIGATOR.

Electric Power for Large-Scale Pumping.

Another important electrical power enterprise has for its object, according to the *Los Angeles Times*, to bring electric power from the mountains in a portion of Riverside county, there to be sold at a low rate to the farmers for the purpose of pumping water from wells, thus making them independent of water companies and irrigation districts, from which they have suffered so much during the past few years. The enterprise referred to is that of Prof. C. G. Baldwin of Claremont, who proposes to bring electric power from the mountains into those sections of Riverside county around Winchester, Perris, Murietta and Los Angeles which are at present devoted almost entirely to grain culture, there being no water for irrigation. Yet the experience of the past few years has proved that a large portion of this section is underlaid by an immense and apparently inexhaustible volume of water. This has been fully proved around Perris, where a large number of successful wells have been sunk, and in the neighborhood of Menifee, by William Newport, a large grain farmer, who has successfully irrigated a portion of his ranch with water pumped by a gasoline engine which lifts at least 60 miners' inches of water and irrigates sixty-two and one-half acres of land, upon which there is now growing a remarkably fine stand of alfalfa. There is no falling off in the supply of water, and the cost of pumping sixteen hours a day during the irrigating season is said to be 20 cents per hour for fuel, which would be equivalent to \$4.80 for a full day of twenty-four hours. Prof. Baldwin estimates that with his electric plant farmers will be able to pump water on these lands at an average cost of not over \$1.50 per acre, on a basis of 1 inch to eight acres. At the same time the land owners would be absolutely free from all the expense and annoyance which frequently attaches to membership in an irrigation district, or absolutely dependent upon a water company.

A Small Plant in San Joaquin.

H. B. Knight, a progressive farmer five miles southeast of Lathrop, has, according to a correspondent of the *Stockton Mail*, concluded that a small farm, well watered and attended to, is better than a large tract farmed in the old way, so he concluded to fix for irrigation. He visited MacHenry's plant, near Modesto, and finding it a success started in to make one for himself. He dug a pit 10 feet deep in the first place and got 4 feet of surface water at that depth. Then he began boring. He has two wells, each 10 inches in diameter and 125 feet deep, located 5 feet apart. He perforated the pipe at each flow of water and struck a good supply—seemingly a large reservoir. He uses a 6-inch centrifugal Jackson pump, which throws 1200 and 1500 gallons a minute. Mr. Knight has about five acres under check, so that he can irrigate or flood it, and the first irrigation can be effected in eight or ten hours. The cost of the plant was about \$300, so he informed your correspondent, without any engine, for he is using his threshing engine to furnish the power.

Fly Bites.

TO THE EDITOR:—My cow, a very good Jersey, has been troubled for over a year with small hard flies. They bite her all over, and when she licks herself she takes the hide off. I have used many remedies; at present I am washing her with crude carbolic acid, two tablespoonfuls to the same amount of coal oil, and one quart warm water. The sores never mature and heal quickly, but each morning there is a new spot of raw red flesh. The cow is nearly seven years old and an excellent animal. She eats well, even greedily, chews her cud and seems perfectly healthy, but very thin. My other cow, a two-year old, with longer and coarser hair, is not troubled with the flies. The hide of the older cow seems covered with tiny lumps. Can you recommend anything to keep the pests away? I have used buhach, borax, fish-oil, sage tea, oil of tar, and now crude carbolic with coal oil, and none are effective.—J. D. W., Sonoma.

Phenyle or creoline, mixed with oil, (1 part phenyle or creoline, 3 parts oil) will be a positive preventative and cure. A teaspoon of saltpeter in the feed for a few days will act on the kidneys and cool the blood. DR. CREELY.

510 Golden Gate Avenue.

THE Sonoma County Horticultural Society will meet in Santa Rosa on Saturday afternoon, June 25, to discuss "The Marketing of Prunes." The subject will be introduced by Jonathan Roberts, and others will speak.

AGRICULTURAL REVIEW.

CALIFORNIA.

Alameda.

TROUBLE IN HOPS.—Pleasanton Dispatch, June 19: The hop fields near here are the scene of serious trouble among the Chinese and Japanese laborers. During a quarrel over the labor contract Chung Lee killed Chung Sing with an ax, on Friday. A general strike is now on against Touli, the Japanese boss. About one-third of the crop has been picked, and the managers of the company are offering inducements to the men to return to work.

Butte.

GRAIN FIRE.—Biggs Notes, June 18: A grain fire occurred this week near Bell's Switch, between Chico and Nord, and eighteen acres of heavy wheat belonging to P. M. Gynn were destroyed, besides a small quantity of hay belonging to H. T. Bell.

HEMP BUSINESS.—Gridley Herald, June 18: A carload of redwood arrived this week for the Rau hemp ranch. The timbers are to be used in building vats, in which the hemp will be treated to a process known as "water retting." This process gives to the fiber a brighter color and secures for it a somewhat higher price than when "rain retted," as is commonly done. Those who "rain ret" their hemp claim that by allowing the stalks to remain on the ground, the rains wash out the substance from the wood and fertilize the soil, making it unnecessary to apply commercial or other fertilizers. Hemp is a crop which rapidly drains land of its plant food, and it will thus be seen that it is a question of cost of fertilizers, compared with the increase in price received for "water retted" hemp. Mr. Cook, the manager of the Rau place, is making many extensive improvements, and reports a fine crop now growing.

HAY DEALING.—C. E. Porter, of Central House, has purchased and will bale and ship some 1500 tons of hay, and he reports a good demand exists, though buyers are not just now stocking up. The Livermore valley, which usually supplies the San Francisco market with 20,000 to 25,000 tons of hay each year, will not have a thousand tons this season, and other large sources of supply during normal years are cut off. So, altogether, the hay market is looking up. Mr. Porter has several presses now at work baling and will commence shipping in about a month.

GREAT GRAIN.—About Chico, Durbam and in parts of Tehama county there will be tremendous crops, frequent cases being reported of twelve sacks per acre. Park Fellows, representing Balfour, Guthrie & Co. of San Francisco, spent several days in Chico and this vicinity. Mr. Fellows stated that he had made a complete tour of the State, and nowhere has he seen such a promising outlook for a grain crop as in Butte county. He says "it will certainly be the hanner wheat county of California." Grain is ripening slowly, owing to the cool weather, thus allowing the heads to become more firm. There will be no shrunken wheat this year. Every kernel is plump and the heads exceptionally well filled.

CHICO CANNERY.—Enterprise, June 20: The Chico cannery will commence work in apricots in about one week. The apricots in this vicinity are ripening rapidly and the cannery is prepared to handle this season's entire crop of first quality canning grade, at the highest going prices for the same. The peach and apricot crops seem to have suffered most from the frost and as a result there will not be sufficient amount of these in the immediate vicinity of Chico to keep the cannery busy. All of the Muirs, Lovells and White and Yellow Clings in this locality have been contracted for, but the entire crop will not keep the Cannery running very long and purchases have been made in surrounding counties.

Colusa.

GRAIN.—Willows Journal, June 15: The weather conditions continue very favorable for all growing crops. Our contention all through the dry winter that we would have wheat to sell has proven true; while the crop will not be over 30 per cent in yield, the increased price will in a great measure compensate for the lesser quantity. There will be sufficient hay as well as almost every kind of fruit. We still live and will celebrate on the Fourth in grand style.

Contra Costa.

TULE ENTERPRISE.—County Paper, June 16: Ex-U. S. Marshal J. C. Franks, in company with J. W. and Jacob Surface of Amador and M. C. Harris and W. G. Witter of San Francisco, has organized the Bradford Reclamation Co. for the purpose of reclaiming swamp and overflowed lands in this county. They have purchased what is known as the Bradford tract of swamp and overflowed land, lying between the San Joaquin and False rivers, in the eastern portion of this county, which includes sections 19 to 33 in township 3 north, range 3 east. There are about 3000 acres of land in the tract, and a number of years ago a portion of it was partially leveed. It also includes lands formerly known as the McSherry and the Williams tracts. It is the intention of this new company to go to work without delay and to thoroughly reclaim the tract. The dry year seems to have brought the tule lands into prominence, for several large reclamation projects are under way, and a good deal of capital is being invested in them. A very strong combination of capitalists has taken hold of Sherman island, and that, too, we understand is to be speedily reclaimed.

Humboldt.

SHEEP.—Arcata Union, June 11: John W. Cooper has returned from his sheep ranch at the Big Bend of Mad river. He tells us that the last rains did a great deal of good for mountain stockmen by assuring much more feed on the ranges and good crops on their ranches or home farms. Owing to the open winter in the mountains the wild animals did not come to prey on the flocks as much as usual. Sheep are generally in fine condition, there is a good crop of lambs and there will be a fine clip of wool, but the wet weather has made shearing late.

ARCATA CREAMERY.—Last week a meeting of Arcata creamery company stockholders was called to consider the matter of selling creamery No. 2, which has been idle for a few years. After due consideration it was decided not to sell but to start it up, which will be done soon. Creamery No. 1, which has been handling all the milk of the company since No. 2 shut down, is now taking care of 26,000 pounds milk per day. Isaac Minor's creamery at McKinleyville is now getting about four tons of milk daily, and the amount is increasing rapidly.

Lake.

THE CROPS.—Cor. Santa Rosa Democrat: The people of Lake county feel better this year than they have for years. The crops are better and by means of the old Squaw creek road leading from Cloverdale to Lakeport, which has been repaired recently by the counties of Sonoma and Lake, they will be able to haul a considerable quantity of their products outside of the county without being burdened with the payment of tolls on the road.

Los Angeles.

SEEDLINGS NOT IN IT.—Pomona Progress, June 16: Within the city limits of Pomona to-day there are about forty cars of seedling oranges yet unpicked. This year's experience with this class of fruit will lead many to rebud their orchards into Navels. That the Seedling orange is fast going out of the market is conceded by the best authorities. Navels are usually shipped until the middle of May, leaving no interval between, previous to handling the late varieties, such as the Sweets, St. Michaels and Valencia. Several orchardists,

having nothing but Seedlings, have not sold an orange this year so far, and now the outlook for receiving a figure that will warrant packing is rather dubious.

CANNING.—The G. W. Waters canning establishment will have about 100 employes engaged this week on the first installment of apricots, and the force will be doubled next week. Redlands is furnishing the first 'cots, being fully ten days in advance of Pomona. The cannery has about five carloads coming from Redlands, which will be exhausted this week. The capacity of the concern has been almost doubled this year. Several new power machines for splitting and pitting peaches will be used in the factory this year. They are the recent inventions of C. E. Grier, the processor. Four splitting machines will be shipped to other factories in the State.

DECIDUOUS FRUIT EXCHANGE.—W. H. Schureman attended a meeting last Saturday of the Southern California Deciduous Fruit Exchange, and reports that the prospects of the exchange are constantly improving; that it is certain it will handle a large amount of fruit this year; that General Manager Sprague says new members are received every week; that the trained and experienced agents of the Southern California Citrus Fruit Exchange will cooperate with the Deciduous Exchange to find the best markets. Mr. Schureman is sanguine that the new exchange is sure to be a valuable factor in giving the grower higher prices for his product.

WALNUT BUYING.—Los Angeles Cor. Fruit World, June 16: Large Eastern houses who make large importations of foreign grown walnuts are now on the coast contracting a large supply of California nuts. Among these a particular case is that of J. B. Inderrieden Company of Chicago. This concern has been one of the largest importing houses of foreign nuts to interior points. Mr. C. V. Inderrieden of that concern has contracted for about ninety cars of California nuts, which to that extent will deter them from importing any foreign walnuts. Of these ninety cars, Inderrieden will secure about seventy cars from the Fullerton Association and twenty cars from the Santa Barbara people. It is said that the crop of walnuts along the Santa Barbara division will amount to about 100 carloads, but owing to dry weather not over fifty cars of first-class stock will be available. Santa Ana has about 100 cars; El Monte about ten cars, which, with the usual quantities from Rivera, Capistrano and other stations, will make a good big walnut crop.

POISONED ORANGES FOR SQUIRRELS.—Santa Ana Blade, June 17: The farmers about Whittier have discovered that ground squirrels are exceedingly fond of oranges, and are taking advantage of this discovery to rid the country of these pests. The fruit is poisoned after the usual method. So far the scheme has been universally successful.

Napa.

OLIVES.—Napa Register, June 17: The olive trees on F. Borreo's Bay View Vineyard farm, near Napa Soda Springs, have blossomed out quite heavily this year, and the prospect for a large yield is very promising indeed. Mr. Borreo gathered twenty tons from his thirty acres last season. Sixteen tons were made into olive oil and four were sold to parties in San Francisco. The total amount of oil made was 500 gallons—300 of No. 1 and 200 of No. 2. At Vincent Smith's Glen Olive Farm the trees have blossomed quite heavily, and there will be a much larger crop the coming season than usual. Mr. Smith made his entire crop last season into oil.

Orange.

HARPER'S CREAMERY.—Downey Champion, June 18: Geo. A. Smith is handling at Harper's Creamery on Old river, of which he is the lessee, 2500 pounds of milk daily from about twenty-five patrons from the San Antonio district; also the cream from the Bixby skimming plant, which he also leases. Mr. Harper anticipated the pressing needs of the neighborhood when he invested his money in a creamery, and his enterprise has greatly stimulated the dairy business of that section.

ALFALFA.—A field of luxurious alfalfa just ready for the sickle—what can be more beautiful to the eye, especially when the new mown hay meets with a ready sale at from \$12 to \$15 per ton in the field? Two miles northwest of Downey is the farm of C. S. Walton. The music of the mower as it clipped the heavy growth of a thirty-acre alfalfa field was an irresistible charm. We engaged in a conversation a few minutes with a son of Mr. Walton. This was the third cutting this season from this alfalfa patch, which has averaged over one and one-half tons per acre at each cutting. The first cutting was baled and brought \$16 per ton in Los Angeles, ten miles distant. The second cutting was sold loose at \$13 per ton. Mr. Walton expects to get eight or nine cuttings from this field this season. Most of the crop will be baled and held for the fall and winter demand, when prices are expected to rule high.

CELERY.—Santa Ana Blade, June 17: At a meeting of the California Celery Company, a short time since, at Westminster, it was decided that about 800 acres of celery would be set out this season, but since that time several land owners have concluded to raise corn and potatoes on land intended for celery, so that in all probability the 800 acres estimated for celery will be reduced more than one-half by the company. This action will preclude all risk of overproduction, and thus assure good returns to celery growers, while abundant crops of corn and other produce, which will be planted instead of celery, will find a ready sale at good prices. The farmers in that section this year are particularly fortunate.

CANNERY.—Anaheim Gazette, June 16: The canning company has called for the payment of its fourth assessment, which will pay up the stock in full. The assessment is \$4 per share. The activity that has characterized the work at the packing house during the past fortnight, but demonstrates the fact that everything is being put under way for an early beginning of operations. Expensive machinery has been purchased and is being placed in position, sugar has been contracted for, tinware bought, and everything placed in readiness for the beginning of the initial season.

Riverside.

POTATO PLANTING.—About 600 acres of potatoes will be planted in the vicinity of Hemet this year. Farmers are preparing the ground now for the fall crop, plowing 10 inches deep. One hundred sacks to the acre is considered a fair yield.

ALFALFA FIGURES.—This is certainly the alfalfa grower's harvest year. One rancher remarked in the Press office the other day that he had sold two and a half tons to the acre of his second cutting at \$12 per ton, or \$30 per acre. He figures on six cuttings, but the total would be about enough to average five cuttings of two and a half tons per acre. That means \$150 per acre this year from the alfalfa crop. Of course, alfalfa hay will not be worth \$12 per ton usually, but some ranchers will be able to pay for their land by the returns of this year's crop, and can face the future of their industry with great complaisance.

Sacramento.

HORTICULTURAL COMMISSIONERS.—See, June 17: This afternoon the Board of Supervisors met for the purpose of electing three Horticultural Commissioners. Supervisor McLaughlin made a motion, which was adopted, that three commissioners be elected, to serve without compensation, they to select an inspector or inspectors, whose total compensation shall not exceed \$900 a year. Jenkins nominated William Johnston and G. H. Cutter. Curtis presented the name of C. E. Brooke. McLaughlin nominated G. Booth. Dremann nominated R. D. Stephens. Cutter and Booth were elected on

the first ballot. For the third commissioner several ballots were taken. Senator Johnston was finally elected, receiving the four votes of the supervisors present.

San Benito.

IRRIGATION NEWS.—Hollister Advance, June 17: Gustave Brown received a 5-inch centrifugal pump this week, and will start up in a day or so. It is his intention to pump water into a reservoir, and then irrigate from the storage. Mr. G. S. Nash has finished his first irrigation. He has set aside the old threshing engine and upon his next run will use a large gasoline engine. McCloskey Bros. have finished irrigating sixteen acres of alfalfa, and are getting ready to put in permanent power. The plant of the San Juan Valley Irrigation Company is running right along, night and day, flooding about six acres of land each twenty-four hours. The company has plenty of water in sight. Irrigation has been concluded on the Shaw and Tebbetts alfalfa farm, and the water is now being pumped upon the Lee Deforce orchard adjoining. Mr. J. M. Jones has finished two wells, 106 and 110 feet deep. A pit to be 8x12 feet and 40 feet deep is now being excavated for the reception of the pump. Chas. Dowdy's engine and engineer are at work on John Woolery's place, west of town. A good supply of water is used in wetting up the alfalfa fields of the neighborhood.

San Bernardino.

STILL PLANTING ORANGES.—S. A. Pease, Horticultural Commissioner, in report to supervisors: Many orchardists are budding over their lemon and some other trees to grape fruit. Probably 300 acres would not more than cover these changes. One hundred and twenty-five acres are being set to citrus fruits in East Riverside. In other portions of the county this will be increased by 500 acres more.

DEVELOPING WATER.—Redlands Facts, June 14: The work of extending the tunnel in Mill creek canyon hed by the Mentone company for the development of water is going steadily forward. The present contract is for an extension of 300 feet, about 60 feet of which has been completed, with an increase of water from about 70 miner's inches to about 100 inches. This is a remarkably good showing.

CANNERY PRICES.—Citrograph, June 18: At least one Redlands grower has sold his apricot and peach crops for this season to the Pomona cannery, receiving \$25 for apricots and \$30 for peaches per ton, delivered on cars here.

REDLANDS CANNERY.—The Redlands cannery will commence work on Monday or Tuesday. The cannery is in perfect order for the season's work. The fruit has been purchased on the trees and will be picked by their own employees. The first company of pickers will be sent out on Monday in charge of a foreman. This plan is regarded as the best method for getting the fruit into the cannery in good condition.

ONTARIO FRUITS.—Record, June 15: Never before at this time of the year did Ontario ship as much fruit as is being shipped at present. The total shipments for the past week were twenty-six and three-quarter carloads, divided as follows: Oranges, 5064 boxes; lemons, 3013 boxes. The crop of apricots and peaches is very large in this section and prices will be the best received for years.

San Diego.

LEMON PRICES.—Union, June 16: Shippers in this city have advanced the price of lemons from $\frac{1}{2}$ and $\frac{3}{4}$ c to 1c a pound. The warm weather in the East has made an increased demand for the fruit.

A GOOD WELL.—El Cajon News: J. Donald, manager of the Boston ranch at El Cajon, struck a large flow of water a short time ago by sinking several feet deeper in the old well which had supplied the ranch with water for household purposes for a number of years. The flow is said to be ten inches. Mr. Donald has kept the pumping machinery in operation now for some weeks, and there is not the slightest decrease in the flow of water in the well. The inrush is so great as to be distinctly heard by persons standing at the top of the well; and when the water first rose to the top the force from below could be easily seen at the surface. The well is now but 33 feet deep.

San Luis Obispo.

ARROYO GRANDE HAY.—Herald, June 18: The hay crop is being rapidly harvested, and the quality and quantity in the valley is fully up to the yield of other years. Many of the farmers will be enabled to sell all of their crop owing to their facilities for irrigating, as they can either flood the land and put in another crop or reincarnate the stubble into green pastures for their stock.

Santa Barbara.

CATTLE SHIPMENTS.—Press, June 16: Five hundred cars of live stock were shipped from Santa Barbara and Ellwood during the past two months. Nearly half of this great number were from Santa Rosa island. In May 135 carloads were shipped from the city alone, and 160 carloads in April. It is understood that there will be a few more small shipments from up-country ranges, though there is thought to be sufficient feed remaining to carry over the depleted herds until another season. There is a considerable quantity of stock believed to be on Santa Cruz island yet, but it is stated that there will be no large shipments.

THE ADVANTAGE OF WATER.—R. M. Drennan of Naples raised thirty tons of hay on nine acres of the Williams' ranch this year, and E. W. Wells cut twelve tons from five acres. The hay was raised on low ground, along the creek, and was irrigated some. It was about the only crop raised in that section.

TOO LITTLE WATER.—Summerland Advance, June 16: After the rain which fell about a month back, many planted corn and beans, which came up nicely and were doing well, but the recent hot weather has wilted the plantings and they probably will never mature. Earlier sown beans and corn are looking well; and, with a little more rain, will raise a short crop. Some hay is now being cut on the lowlands. Although the stalks are short and the crop will be light, it is an improvement on no hay. The walnut and fruit trees promise a fair crop. A fair crop of potatoes will also be raised this year.

LOMPOC.—Crops are turning out better than expected. There will be considerable hay, which they are selling for \$20 in large lots.

Santa Clara.

SUGAR BEETS.—Pajaronian, June 16: The beet crop of the Spreckels uplands, near Aptos, shows well. There is a very good stand. The beet crop continues to prosper in Pajaro valley. There will be some surprising yields. From 500 to 600 acres of this valley are planted with California beet seed. The crop looks encouraging. California will yet be independent of German seed.

FRUIT PRICES.—San Jose Herald, June 18: At the Grange meeting to-day it was reported that apricots were selling at \$45 a ton, green, and several persons were holding prunes for \$40 a ton. Muir peaches are being contracted for by the canneries at \$30, and Clings at \$50. The canneries will take nothing smaller than 2 $\frac{1}{2}$ ¢. The general impression prevailed among the members that the prune crop would be heavier this year than last if the prunes did not fall from the trees.

Tulare.

SORGHUM.—Lemoore Leader, June 18: T. W. Standart has planted twenty-two acres to sorghum in the Wigginton section, seven miles southwest of town, as an experiment. Sorghum is said to make the richest feed for cattle, horses and hogs by those who have grown it in Los Angeles and the Eastern States, and in view of the high prices prevailing for bay his experiment will no doubt be watched with interest by all farmers.

THE HOME CIRCLE.

Tempered.

When stern occasion calls for war,
And the trumpets shrill and peal,
Forges and armories ring all day
With the fierce clash of steel.
The blades are heated in the flame,
And cooled in icy flood,
And beaten hard, and beaten well,
To make them firm and pliable;
Their edge and temper good;
Then tough and sharp with discipline,
They win the fight for fighting men.

When God's occasions call for men,
His chosen souls He takes.
In life's hot fire He tempers them,
With tears He cools and slakes;
With many a heavy, grievous stroke
He beats them to an edge,
And tests and tries, again, again,
Till the hard will is fused, and pain
Becomes high privilege;
Then strong, and quickened through and
through,
They ready are His work to do.

Like an on-rushing, furious host
The tide of need and sin,
Unless the blades shall tempered be,
They have no chance to win;
God trusts to no untested sword
When He goes forth to war;
Only the souls that, beaten long
On pain's great anvil, have grown strong,
His chosen weapons are.
Ah, souls, on pain's great anvil laid,
Remember this, nor be afraid!

—Susan Coolidge.

How Grandma Went Home.

Dear old Grandma Jackson, like everybody else, had la grippe, and had it badly, too. She did not die, but she came near it. After a long time, when the doctor allowed her to creep down stairs, white and weak and wan, her mind was filled with the queerest notions. She thought she was making a visit to her brother in New Hampshire.

Day after day she spent in the big rocking chair at the sitting-room window, gazing out at the familiar street with wistful, dim blue eyes, and keeping up a pitiful murmur of "Oh, if I could only go home I know I should get better right straight off! If they'd only let me go home!" Grandpa, in his seat opposite, worried much over her unhappy fancy. There were moments when she did not even recognize him, but bent upon him the same troubled look, as if a strange face had suddenly replaced the one which she had known and loved for so long. "Don't you think we'd better be talking of going home, father?" she would ask every morning, in an anxious whisper. "It seems to me we have been here too long now, and there is no use wearing out one's welcome. I guess Ezra's folks'll never want to set eyes on us again and I should like to get back to Boston pretty soon. There's all my spring cleaning to attend to. Oh, dear; I do want to go home!"

"Well, but mother," grandpa would begin; but she went on without heeding him.

"Ezra's wife is well meaning enough, but she's dreadfully wearing, and that bed put in the north chamber is as hard as a pine log. Now that I am feeling poorly seems as if I'd like to go back to my own bed. There isn't one to compare with it in this whole place—all live goose feathers, every one of them. Oh, father, I don't believe I shall ever get any stronger here! Won't you see if you can manage to take me home somehow?"

And so she kept up that never ending homesick cry. The sunshiny May came and went. The elms on the common tossed their boughs against the bluest of blue skies; children play once more in the long shaded walks; feathered bands flooded the air with music; and the world was filled with the joy of springtime, but there were deepening wrinkles on the gentle, old face beneath the soft white cap that rested on still softer white hair, and grandma's shriveled hands, busied with their knitting, trembled until the needles glistened in the sun. A note of despair crept into her longing for home. She could see from her place at the window the common growing green and the rush of sunshine lighting up every corner of

the street, to which she had come half a century before as a bride.

There was the house where her children were born, where some of them had died. In this very room Rachel and Marta were married many a year ago. Here her boys had clung to her neck with tears as one by one they said good-by to her and gone into the world to make their own fortunes. Loving memories were associated with the very chairs and tables, but to grandma's bewildered and failing sight they were only strange, unfamiliar shapes. "I want to go home!" she murmured still. "I want to go home!"

The doctor shook his head one day as he strapped up his case of medicines and drew on his driving gloves. Miss Lizzie has followed him out into the hallway.

"You don't think she is failing, doctor, do you?" she asked with sudden dread.

"Well, I don't know; her mind is wearing out her body, and if she don't get over that idea that she isn't at home soon, I'm afraid she may break down under the strain. The only thing to be done is to give her nourishing food and keep her as cheerful as possible. Good morning!" and the doctor hurried away.

Miss Lizzie turned back into the sitting room. The few words had removed scales from her eyes, as it were. She realized with a pang how worn the dear figure by the window had grown of late, and how her mother's strange delusion had tightened its hold week by week. She went about her work all day with a weight at her heart, an unspoken prayer on her lips. Anxious Miss Lizzie, an old maid in the old home, was returning to her parents the tender untiring care which they had bestowed upon her as a child. Through the long night she lay awake wondering if something could be done to clear away the cobwebs from that poor, befogged brain. In the early morning an inspiration came to her so happy that she breathed a deep sigh of relief and fell asleep only to be aroused by the birds twittering in the vines outside, and a broad ray of sunlight drifting across her face.

As soon as she was dressed she hurried into her mother's room and drew the curtains aside briskly, letting in a flood of light and the warm, sweet morning air.

"Well mother," she cried cheerily, "this is a splendid day for you to ride, isn't it? You know you are going home to-day."

"Why so I am," said grandma, with a smile of childish delight as she sat up in bed. "I declare I had almost forgotten it. Seems as if the time would never come. We aren't going till after breakfast, are we, Lizzie? I hope you'll see that your father is ready. He's growing very slipshod of late in his ways."

"Oh, he is home already," answered Lizzie. He wants to be on hand when you get there."

So grandma rose in a state of excitement to take her tea and toast and egg with a relish she had not shown since her illness. Then she was dressed as for a journey in her best black cashmere, her camel's hair shawl, the big black bonnet with the purple violets within the brim, the shiny one-button black gloves, her overshoes and the little worsted work bag on her arm to hold her "specks," handkerchief and her portemonnaie, and she was ready to start out. Miss Lizzie took her arm and they started down the long flight of stairs.

She helped her down the front steps leading to the sidewalk, talking to her all the time about her return home, and keeping her attention away from the scenes about her. Then she helped her into the carryall that stood by the gate waiting.

"I'll warrant that when we get there," said Lizzie, after they were in the carriage, "father'll be waiting for us at the top of the steps." They drove for some time, when Lizzie broke out: "Well, here we are at last! It's been a long, tiresome journey, but I guess you've stood it pretty well."

For an instant the old lady stood

dazed, but Lizzie called out: "Well, if there isn't father just as I said he'd be!" Grandma caught sight of him as he stood at the top of the steps.

"He was looking for us sure enough," she said. They helped her out and up the steps. All the rest of the family had been taken into the plot. Cynthia Ann, the hired girl, came out from behind grandpa.

"Well, well, mother," said the latter, stepping forward and taking her hand in his and stooping to kiss the faded cheek, "It does seem nice to have you back again! I thought you were never coming. Aren't you tired after your ride. Come right into the sitting-room and take off your things."

"Well, Mrs. Jackson," joined in Cynthia Ann, "I guess you'll find things looking pretty well. I've tried to keep them straightened out while you were away, but I'm mighty glad to get you home again. Wouldn't you like some tea? 'Twould kinder rest you after coming such a ways."

Grandma's face lighted up with pleasure. She was led to the sitting-room unresisting, glancing about with deep satisfaction. She sank into her rocking-chair and drew a long breath of happiness. Lizzie took off her things, then brought her white cap, to tie on lovingly, and the long blue stockings so that the fingers could begin their knitting work again. Grandma looked out through the window and laughed a pleased little laugh to herself.

"Well, there's no better place than Boston after all, I tell you, father, I am glad to be home again. I've been feeling pretty miserable, but I guess I shall begin to pick up now I've got back to my own living, though Ezra's wife did try to make me feel at home." She laughed again, and it did Lizzie's heart good to hear her.

"But there is one thing queer about my being at Ezra's," she went on presently, "I can't seem to remember how 'twas I ever came to go there at all. But one thing I've made up my mind to; I'm never going there again."

That night when she went to bed she drew Lizzie's face down to her own, peaceful and smiling once more, and said: "Oh, Lizzie, I'm going to get better now, I'm so glad to be back, for there is no place like home."

Walking Upstairs.

Many people will be surprised to know that there is a scientific way of walking upstairs. A physician, in telling how it is done, says that usually a person will tread on the ball of his foot in taking each step. This is distinctly a bad practice; it wears and tires the muscles, as it throws the entire suspended weight of the body on the muscles of the legs and feet. In walking upstairs the point to be secured is the most equal distribution of the body's weight possible. The feet should be placed squarely on the step, heel and all, and then the work should be done slowly and deliberately. In this way there is no strain upon any muscle, but each one does its duty in natural manner. The practice of bending nearly double when ascending stairs is extremely pernicious. It cramps the lungs and makes the heart work harder. A slightly forward inclination is all that is necessary to make the method of going upstairs about described a much less laborious task than it usually is.

Sothorn, the actor, once said he would throw an extraordinarily foolish man across the Hudson river at a narrow part, and made a bet with him to that effect. A crowd went to see the performance. Sothorn, after grasping the man with care, flung him into the river. When the latter reached the bank, he panted out, "You have lost your bet." "Not at all," coolly replied Sothorn. "That is only my first attempt. I mean to keep on trying all day until I get you over." The man paid the money.

"Those Spanish warships ought to sell well to the fish-tackle dealers." "What for?" "Sinkers."

Washing the Baby's Clothes.

This is not an unimportant task for the little garments accumulate very fast, and if the washing is done only once a week, the laundress will be surprised at the size of the pile of clothes that await her attention. In this work as in every other, much time and labor would be saved by adopting the proper methods.

The first thing to be done is to carefully sort the clothes and but everything but the flannels in lukewarm water to soak, having the napkins in one tub, and the dresses of muslin skirts in another. After they have soaked an hour, rub them out and place them in suds, to which a little powdered borax has been added. Strong washing powders should never be used to wash anything that comes in contact with the baby's skin, for if the least trace of it remains after the rinsing is done, it will irritate the tender flesh, causing him to suffer torture.

Put the white clothes in a boiler and allow them to scald a few minutes, then dip them out into clear water. Rinse thoroughly through one blue water, and dip the lower part of the skirts and dresses in thin starch; the waist and sleeves of the dresses should never be starched. A sunny grassy yard should be chosen for drying, or if indoor drying is a necessity, see that it is quick and thorough.

Harsh and full-up flannels are entirely unfit for a baby, and there is no need of having them so, if the proper care is taken in washing them.

Heat the water until it is as warm as you can bear your hands in comfortably; add a tablespoonful of borax to every bucketful, and enough soap to make a good suds. Immerse your white flannels in this, having them well covered and let them soak five minutes, then rub gently between the hands until clean. The borax softens the water and cleanses the fabric, leaving it beautifully soft and white.

When the garments are clean, rinse them and shake thoroughly. Have the washing and rinsing water the same temperature, and do the work quickly. Never allow flannels to lie after they are wet, but get them on the line as soon as possible. If they are hung out so that a gentle breeze will blow through them, they will be softer and nicer than if the day is perfectly still.

A Mistake in Values.

Said a physician: "I wonder that women fail to appreciate how much nervous force as well as physical strength they consume in worrying over the little things of life. Look at the mother and housewife as she goes about her tasks, and observe how often she utters an impatient exclamation, how often she sighs over her servants' shortcomings, how often she starts nervously at a noise from one of the children. And each time that she loses control over herself, her nerves, her temper, she loses just a little nervous force, just a little physical well-being, and moves a fraction of an inch farther on in the path that leads to premature old age and to invalidism."

If American women would only learn that it is not work, but worry, that kills! The average woman puts too much of herself into the correction of the children, into the ordering of her household, into the management of her servants. Only a few days ago I heard a mother and housekeeper say that she had "worried herself sick" over the fact that she must change her maid.

A clever woman said to an excitable sister, "My dear, do not use a pile driver to pin on a bow of ribbon!" Do not many of us use the pile driver when a slight pressure of the finger will do the work as well and better? And if we exhaust all our reserve forces over the petty cares, what strength will we have with which to meet the great trials of life? There is one text which it would be well for the nervous and

excitable woman to say each day to her often-perturbed self:

"If thou hast run with the footmen, and they have wearied thee, then how canst thou contend with horses? And if in the land of peace wherein thou trustedst they wearied thee, then how wilt thou do in the swelling of Jordan?"

Harnessing the Sun.

When we sit in front of a coal fire, do we realize that the heat and light of the burning coal are really sunshine that has been stored up for ages? Centuries ago the sun shone on the earth, and plants and trees grew, fell, and grew again; they were covered by geologic deposits and acted upon by great heat and pressure, until in the course of ages these layers of organic matter were transformed into coal. The coal thus represents the work done by the sunshine ages ago, and when it is burned the imprisoned solar energy is loosened again. Our system of power production depends upon this presence of energy. But coal is a wasteful source of energy. Even the best engines do not utilize over 10 per cent of the calculated energy of the heat of coal. And besides this, it is an inconvenient thing in many ways; it has to be mined, freighted and stored. Can we not find some more economical way of using the sun's energy? During the last few years the great progress in electrical science has enabled man to utilize the solar heat in a thriftier way. During its day's work the sun draws up a large amount of water from the oceans and the damp earth. By the action of its rays plant life flourishes, and plants draw from the ground and evaporate into the air large amounts of water. Thus an oak tree of average size, with 700,000 leaves, lifts from the earth into the air about 123 tons of water during the five months it displays its foliage. This evaporated water, sooner or later, falls as rain and by the action of gravity begins to flow downward. Thus the great rivers are fed. Round and round incessantly goes the water lifted by the tireless sun, to fall when deserted by him, and again to be lifted, and again to fall and run seaward as long as it may exist upon this earth.

Will be the Largest Flag in the World.

The stars and stripes in the shape of the largest flag in the world will float over Morro Castle, Havana, when Blanco surrenders. The immense flag designed for this duty is already prepared by a patriotic Wall-street man. It measures 120 feet in length and 43½ feet in width, and it is believed that it breaks the record for size. It is so big that special bunting was made for it in Boston. The bunting measures 42 inches across in the rough. Made up in the flag, allowing for seams, each stripe measures 40 inches. It took a full piece of forty yards for each stripe except where they run into the jack. The jack measures 40 feet in length and covers the space of seven stripes. The stars are not very large. From point to point each star measures 14 inches. They are arranged in alternating rows of seven and eight, according to army regulations. The flag will cost \$290. Big as it is, it can be packed in a large traveling trunk and will not weigh more than 200 or 250 pounds.

STATISTICS recently published by the Interior Department show that the Government still has over 600,000,000 acres unoccupied. This is enough to give each of the 73,000,000 people in the country a homestead of eight acres and still have 16,000,000 acres left. The land is distributed among twenty-six States and Territories. The largest amount is located in Alaska, where there are 369,572,600 acres. Most of this land will never be available for homestead purposes, of course, but its mineral value may be more than if the whole vast tract was available for grazing and farming purposes. The remainder of the land lies in productive States, but much of it is barren and arid or mountainous.

Chaff.

If you want to be well informed, take a paper. Even a paper of pins will give you some good points.

During a discussion of religious topics young Brown said: "I tell you that, if the other animals do not exist after death, neither will man. There is no difference between man and a beast." And good old Jones mildly replied, "If anybody could convince me of that, it would be you, Brown."

"I met a woman the other day," says a writer in the *Chicago News*, "who has met Rudyard Kipling. Not only has she met him, but she has broken bread with him, and she has heard him talk. I asked her what impressed her most about him,—think of the man who wrote 'The Gadsbys' and 'The Seven Seas' and 'Soldiers Three.' She said she was most deeply impressed by the fact that Mrs. Kipling calls him 'Ruddy, dear.'"

On one occasion, when Mr. Huxley had lectured on the nervous system, a lady came up to him, and said: "I am so much obliged for your charming lecture,—so very interesting and so clear. But there was one point I did not quite understand." "Thank you, madam. I shall be very pleased if I can explain to you any point I may have insufficiently expressed." "Well, Prof. Huxley, what I want to ask is about what you called the 'cerebrum.' I did not quite gather whether it is inside the skull or outside."

Kind old party (to sobbing urchin): "My little lad, you shouldn't cry that way." Urchin: "What other way kin I cry?"

A bee, buzzing very loudly flew in at the open window. "My! his wings must be awfully rusty," exclaimed Nan. "Just hear how they creak!"

"Every morning on the way to school," said the little miss, "the boys catch me and kiss me." "Why don't you run from them?" asked her father. "Because," replied the small edition of Eve, "maybe they wouldn't chase me."

"Well, sir," said the old farmer, "this red-tape Government is the very wust. Why, you've got ter stan' a reg'lar school examination fer ever'thing! Fust, they turned John down fer the postoffice jest kase he didn't know nothin' 'bout spellin' an' 'rithmetic, an' now they won't take him in the army kase he's bow-legged in one leg an' knock-kneed in the other! How kin they expect people to live happy under a Gover'ment like that?"

The Morning Toilet.

The finest compliment we ever heard paid to a woman was by her husband, and he said in speaking of her:

"We always think of her as a morning glory, because she looks so bright and cheery and pretty at the breakfast table."

How many breakfast tables are presided over by women who make no effort to be dainty! The claim that household duties keep women from looking well in the morning is easily disproved, for in many a household where the lady gives a helping hand in the kitchen, a big apron will thoroughly protect her dress, and then, too, cooking, unless one makes it so, is never dirty work. That woman commits an error who looks uncared for and badly dressed in the morning. The other woman who wears any old thing to the breakfast table is also making a mistake, for that is the time when the men of the household ought to see a woman at her best and not specially rely on her appearance in the evening, when the soft and charitable light of the gas will hide many defects.—Household.

At a recent dinner the ladies' souvenirs were philopena bangles. They were double-twisted gold wires, to which were attached double almond meats in enamel, so natural in shape and shade that at first one was disposed to think they must be natural.

DOMESTIC ECONOMY.

Domestic Hints.

BIRD'S NEST SALAD.—Of the heart leaves of lettuce make little yellow-green nests, in which are to be placed tiny speckled eggs made of cream, or Neufchatel cheese softened with butter, rolled into shape and dotted with parsley. Serve with mayonnaise or French dressing poured under the nests so that sauce is invisible.

CARAMEL ICE CREAM.—Take three pounds of dark brown sugar, stir in an iron saucepan over a brisk fire until it is a liquid, add to this a pint of boiling milk, stirring until it curdles, strain off the liquid, put it aside to cool. When cool add this liquid to a gallon of cream or unsweetened custard, which it will both sweeten and flavor. It improves this ice cream to add a pound of almonds blanched and shredded fine when it is nearly frozen.

CHERRY TAPIOCA PUDDING.—One and a half pounds of cherries, one cup of tapioca, one cup of sugar. Cover the tapioca with cold water and soak over night. In the morning put it on the fire, with one pint of boiling water. Simmer slowly until the tapioca is perfectly clear. Stone the cherries, stir them into the boiling tapioca and add the sugar. Take from the fire, turn into a dish and set away to cool. Serve very cold, with sugar and cream.

COLD TOMATO PICKLE.—To one-half peck ripe tomatoes, pared, chopped fine and drained two hours, add one quart vinegar and allow it to stand until the rest of the ingredients are made ready. Measure out one cupful onion, chopped fine, one cup sugar, one cup white mustard seed, two tablespoonfuls black pepper, one tablespoonful cinnamon, one of cloves, one teaspoonful mace, two or three heads of chopped celery, one small red pepper, one cupful grated horseradish, one cupful nasturtium seed and one-half cup of salt. Stir together and bottle without cooking.

CREAM PIE.—Put one pint of milk in the double boiler and let it come to a boil. Beat together the yolks of two eggs, one-half cupful of sugar, two tablespoonfuls of flour or cornstarch; stir this into the boiling milk and cook until thick. Flavor with lemon or vanilla. Line a pie plate with puff paste, and bake first; then pour the boiled custard into the baked crust; then spread over it a frothing made of the beaten whites of the eggs and a tablespoonful of powdered sugar. Put the pie in the oven and brown slightly.

CHEESE CROQUETTES.—Make a thick, white sauce with two tablespoonfuls of butter, two tablespoonfuls of flour and two-thirds of a cupful of milk. Add one-quarter of a teaspoonful of salt, one-quarter of a teaspoonful of pap-

rika, and cook for five minutes. Stir in the yolks of two raw eggs and one and one-half cupfuls of finely chopped cheese. Take from the fire as soon as the cheese melts and pour into a buttered pan of such size that it will be fully half an inch deep. When cold and firm, turn out on a board, cut into fingers, dip into slightly beaten egg and roll into crumbs; let stand for ten minutes, give a second coating of egg and crumbs and fry golden brown in smoking hot fat. Drain on unglazed paper and serve very hot.

ASPARAGUS SAUCE.—Take one bunch of green asparagus, salt, one ounce of fresh butter, one small bunch of parsley, three or four green onions, one large lump of sugar, four tablespoonfuls of white stock. Break the asparagus in the tender part, wash well, and put them into boiling salt and water to render them green. When they are tender take them out and put them into cold water; drain them on a cloth till all the moisture is absorbed from them. Put the butter in a stewpan with the parsley and onions; lay in the asparagus and fry the whole over a sharp fire for five minutes. Add salt, the sugar and white stock, and simmer for another five minutes. Rub all through a tammy, and if not a very good color, use a little spinach green. This sauce should be rather sweet. This is suitable for garnish.

Macaroni.

Mrs. Lincoln recommends macaroni as a dish that should be frequently on the table, and suggests that its service between seasons, when other foods are somewhat scarce, is especially useful. The wheat flour used in its compounding is more digestible in this form than when served in bread.

Much of the macaroni offered at the average family table is dry and tough. In its preparation a little care only is needed to prevent these undesirable qualities. It should be boiled rapidly and not allowed to stand in hot water on the range, as is too often done. When it is tender, after its quick boiling in salted water (and it should be put in when the water has reached the boiling point), it is turned into a colander and cold water run quickly through to rinse and blanch it. It is then put into a baking dish, and, if cheese is to be used, this is the moment to grate it over in a fairly thick layer. Afterwards cover with a white sauce made with a tablespoonful each of flour and butter stirred smooth in a cup of hot milk. Pour this over the macaroni and cover with a crust of fine cracker crumbs, which have been slightly moistened with hot butter. The cracker crumbs will be found to be better than bread crumbs, and the compound beneath should be creamy, light and altogether toothsome.

AN OLD BULLY.

People who live in fear of his attacks.

How to avoid him or beat him off.

If biliousness isn't the bully of the body then what is? When once biliousness gets the upper hand you don't dare say your stomach is your own. "Don't you dare eat that dish says biliousness, or you'll see what I'll do." You take the dare and you do see or rather feel, the weight of the bully's revenge. The head aches, not a regular ache, but an open and shut ache. The eyes ache, not with a dull, tired ache, but with an aggressive ache, as if they were being bored by a gimlet. The stomach trembles with nausea. "The whole head is sick and the whole heart is faint." There are scores of hundreds of people who live so under the dominion of this bully biliousness that they don't dare eat or drink without his permission. There's no need of such slavery. Dr. J. C. Ayer's Pills effectually cure biliousness.

"For fifteen years I have used Dr. J. C. Ayer's Pills, and find them very effective in all kinds of bilious complaints. They are mild in operation and easy to take. I prefer them to any other pill, and have yet to see the case where they have failed to cure."—A. SWANGER, Texarkana, Ark.

"I have used Dr. J. C. Ayer's Pills in cases of biliousness and general disorders of the stomach and bowels and have found

them to be always reliable. They are less liable to gripe than other purgatives, and although mild in action, they are thorough in operation. They are the best family physic that can be had."—PETER J. DUFFY, Rockport, Texas.

"Having used Dr. J. C. Ayer's Pills for years and thoroughly tested them, both as a preventive and cure for biliousness, I can truthfully say that I believe them to be the best medicine for the purpose and they do all that is claimed for them."—JNO. E. KOLB, Shark, Ark.

Biliousness is in general but a symptom of a more stubborn disorder, constipation. Constipation is the root of almost all physical evils, and Dr. J. C. Ayer's Pills cure almost all these physical evils by going to the root. They cure constipation, and the consequent maladies, biliousness, heartburn, palpitation, shortness of breath, sleeplessness, nervous irritability, foul breath, coated tongue, and a score of other miserable maladies that have their origin in constipation. Dr. Ayer's Pills are the surest and safest remedy for all diseases of the liver, stomach, and bowels. Send for Dr. Ayer's Curebook and read the story of cures told by the cured. Free. Address the J. C. Ayer Co., Lowell, Mass.

S. F. MARKET REPORT.

Produce Market.

SAN FRANCISCO, June 22, 1898.

Chicago Wheat Futures.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

| | July. | Dec. |
|----------------|--------------|--------------|
| Wednesday..... | 78 @ 79% | 71 1/4 @ 72% |
| Thursday..... | 81 1/4 @ 78% | 73 1/2 @ 71% |
| Friday..... | 78 @ 75% | 70 1/2 @ 69% |
| Saturday..... | 74 1/4 @ 72% | 68 1/2 @ 68% |
| Monday..... | 70 1/4 @ 72% | 67 @ 68 1/4% |
| Tuesday..... | 72 1/4 @ 74% | 67 1/2 @ 69% |

Liverpool Futures.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

| | July. | Dec. |
|----------------|------------|-------------|
| Wednesday..... | 7s 6 1/4 d | 6s 1 3/4 d |
| Thursday..... | 7s 5 d | 6s 1 1/2 d |
| Friday..... | 7s 1 1/4 d | 6s 0 3/4 d |
| Saturday..... | 6s 8 1/4 d | 5s 11 1/2 d |
| Monday..... | 6s 3 1/4 d | 5s 8 1/2 d |
| Tuesday..... | 6s 5 1/4 d | 5s 9 1/2 d |

San Francisco Futures.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

| | Dec. | May. |
|----------------|-------------------|------------|
| Thursday..... | \$1 35 @ 1 32% | \$1 36 @ — |
| Friday..... | 1 31 1/2 @ 1 31% | — @ — |
| Saturday..... | 1 31 1/4 @ 29% | — @ — |
| Monday..... | 1 29 @ 31 | 1 33 @ — |
| Tuesday..... | 1 29 1/2 @ 31% | — @ — |
| Wednesday..... | 1 29 1/4 @ 28 1/4 | — @ — |

Wheat.

Dullness and absence of strength, with values poorly defined, continue to be the characteristic features of the wheat market in this center, as regards business in actual grain. Nominal values for spot wheat remain close to the figures last quoted, but to realize readily lower figures would have to be accepted. There was a moderate amount of trading in futures, December wheat losing about 5c during the week, with market showing much depression toward the close. Eastern markets were lower, Chicago recording a decline of fully 5c per bushel in July wheat and about 3 1/2c in December. The greatest break, however, was in Liverpool futures, July declining the equivalent of 90c per cental and December about 7c. At close both Eastern and foreign markets showed decided weakness.

The movement in wheat continues light at this center, both from interior points to tide-water and from here to foreign ports. There has been little or no inducement lately to forward wheat to market, with demand slow and indifferent, and values not well defined beyond the fact that they are at a low range, especially so for this State, considering that it is a short crop year. In most other wheat sections the crop is turning out well or is promising to do so. The shortage in this State has consequently little or no effect in determining values in foreign centers. It would seem to be no more than proper and in keeping with the eternal fitness of things if California should next year have a big yield, with a sufficient shortage elsewhere to enable producers to obtain better figures than there is now prospect of being realized this season. There would be no cause for complaint if the heavier yield should bring the better figure per cental. Such has been the case in some previous seasons, and under similar conditions is apt to be experienced again. Only one wheat ship has cleared from this port thus far the current month, and only one week remains to change the record for June. This is in striking contrast with busy times in the wheat trade, when it is not unusual to have clearances average one full wheat cargo per day. In September of this season thirty-four wheat cargoes were cleared, and November made nearly as good a showing, with twenty-nine cargoes to her credit. There are only five ships on the engaged list for wheat loading, all having arrived under charter, one at 33s 9d to Cape Town, South Africa, and four at rates ranging from 27s 6d to 30s to Cork, U. K., for orders, usual option. The latter is now the lowest figure quotable on desirable iron ships. Iron vessels are being taken for loading wheat on the Columbia river for Europe at 36s 3d to 37s 6d. There is a good demand for ships to carry wheat from Oregon and Washington.

California Milling.....\$1 45 @ 1 55
Cal. No. 1 shipping, alongside.....1 35 @ 1 37 1/2
Oregon Valley.....1 35 @ 1 37 1/2
Walla Walla Blue Stem.....1 35 @ 1 45
Walla Walla Club.....1 30 @ 1 35

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 white wheat per cental for the week were as follows for the options named:

December, 1898, delivery, \$1.35@1.25%
May, 1899, delivery, \$1.36@1.33.
Wednesday, at regular noon session of Call Board, December wheat sold at \$1.29 1/4 @ 1.28 1/2; May 1899, \$— @ —.

Taking into account the amount of wheat and flour on hand at the beginning of the season, the amount on hand at the end of the season, and the amount received from points outside the State, the exportable surplus of California for the past eighteen years appears as follows, in short tons:

| | | |
|-----------|-------------------|-----------|
| 1897..... | 603,766 1888..... | 600,653 |
| 1896..... | 630,732 1887..... | 576,315 |
| 1895..... | 449,172 1886..... | 776,638 |
| 1894..... | 368,915 1885..... | 463,709 |
| 1893..... | 662,506 1884..... | 1,193,808 |
| 1892..... | 735,764 1883..... | 711,275 |
| 1891..... | 784,425 1882..... | 776,788 |
| 1890..... | 728,382 1881..... | 755,682 |
| 1889..... | 958,225 1880..... | 1,380,000 |

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

| | 1896-97. | 1897-98. |
|----------------------|-----------------------|---------------|
| Liv. quotations..... | 6s 1/4 @ 3s d | 6s 5d @ 6s 6d |
| Freight rates..... | 20 @ 22 1/4 | 27 1/4 @ 30s |
| Local market..... | \$1.23 1/4 @ 1.27 1/4 | \$1.35 @ 1.40 |

The prices above are for spot lots of stand-

ard No. 1 California in Liverpool and for good to choice shipping in this city.

Flour.

Values have been lately decidedly unsettled, with pronounced tendency in favor of the buying interest. There has been considerable cutting of prices in this center. Official rates were marked down 25c per barrel. Quotations would doubtless be still lower but for the recognized fact that such reductions only tend to further check the demand. There is a general timidity about purchasing on a falling market.

| | |
|---------------------------------|---------------|
| Supertine, lower grades..... | \$3 40 @ 3 75 |
| Superfine, good to choice..... | 3 75 @ 4 00 |
| Country grades, extras..... | 4 75 @ 5 10 |
| Choice and extra choice..... | 5 00 @ 5 35 |
| Fancy brands, jobbing..... | 5 15 @ 5 35 |
| Oregon, Bakers' extra..... | 4 75 @ 5 00 |
| Walla Walla, Bakers' extra..... | 4 75 @ 5 00 |

Barley.

Although arrivals have been recently rather light, as compared with receipts during May and the early part of this month, the market has failed to develop any better tone. With relatively cheaper oats and corn, and liberal supplies of those cereals, it is not difficult to realize why barley has been dragging and tending downward in price the past few weeks, despite decreased receipts. Prospects of new crop barley coming forward at an early date also aided in depressing the market. Trading in spot offerings by sample was light and was confined almost wholly to ordinary feed descriptions. High grade, or so-called brewing barley, has been in such poor request for months past that little more than nominal quotations for the same could be given. It is not to be presumed that brewers and maltsters have been going without barley, it being far more probable that they have been using lower grades, as they have done on many former occasions when barley has been scarce or high, showing that the term "brewing barley" is misinterpreted when it is understood that the quality must be up to a high standard to be available for brewers.

| | |
|---------------------------------|--------------|
| Feed, No. 1 to choice..... | 1 17 1/4 @ — |
| Feed, fair to good..... | 1 15 @ — |
| Brewing, No. 1 to choice..... | 1 25 @ 1 35 |
| Chevalier, No. 1 to choice..... | — @ — |
| Chevalier, No. 2..... | — @ — |

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

December, 1898, delivery, \$1.18@1.14%
May, 1899, delivery, \$— @ —.
Wednesday at regular noon session of the Call Board Dec., 1898, feed sold at \$1.15 1/4 @ 1.14%; May, 1899, \$— @ —.

Oats.

There is no improvement observable in the general condition of this market. Despite reduced receipts and less pressure to realize than was manifested a few weeks ago, values are at fully as low a range as at any time since the recent downward movement in prices began. Such transfers as are effected are mainly in feed oats of the white and gray varieties, and within range of \$1.25@1.30 for fairly good to choice. Surprise oats are held higher, but there is very little doing in them.

| | |
|-------------------------------|---------------------|
| White Oats, fancy feed..... | 1 35 @ — |
| White, good to choice..... | 1 27 1/4 @ 1 33 1/4 |
| White, poor to fair..... | 1 25 @ — |
| Gray, common to choice..... | 1 27 1/4 @ 1 32 1/4 |
| Milling..... | 1 32 1/4 @ 1 35 |
| Surprise, good to choice..... | 1 35 @ 1 40 |
| Black Russian..... | — @ — |
| Red..... | — @ — |

Corn.

There has been a fair amount of trading in Eastern product, values for the same being tolerably well sustained. Arrivals of imported are showing material decrease, and the movement from the East to this center is likely to wholly cease at an early day. Supplies of domestic or home-grown continue light. Market for Small Yellow remains as unfavorable to buyers as previously noted.

| | |
|----------------------------------|-------------|
| Large White, good to choice..... | 1 05 @ 1 10 |
| Large Yellow..... | 1 05 @ 1 10 |
| Small Yellow..... | 1 35 @ 1 40 |
| Eastern Yellow..... | 1 00 @ 1 05 |
| Egyptian White..... | — @ — |
| Popcorn, shelled, 1 lb..... | — @ — |

Rye.

Further weakness has been developed, with demand very limited and sales difficult to effect at the reduced quotations.

| | |
|--------------------------|-------------|
| Good to choice, new..... | 1 20 @ 1 25 |
|--------------------------|-------------|

Buckwheat.

Virtually nothing doing in this cereal, and in consequence only nominal quotations are possible. There is none offering, and demand is also lacking.

| | |
|---------------------|-------------|
| Good to choice..... | 1 75 @ 1 85 |
| Silverskin..... | — @ — |

Beans.

Market is ruling very quiet. To effect noteworthy sales, less than current quotations would have to be accepted. If buyers were to attempt to purchase freely, however, there would be a speedy hardening of values, the market being in a very sensitive condition. Owing to prospects of a light yield next fall and to anticipation of liberal orders for the Government and on Klondike account, most varieties are being, as a rule, steadily held. Limas are not in large supply here, but are being offered rather freely from southern coast points of production.

| | |
|----------------------------------|-----------------|
| Pea, fair to good, 100 lbs..... | 1 85 @ 1 95 |
| Small White, good to choice..... | 1 85 @ 1 90 |
| Lady Washington..... | 1 80 @ 1 85 |
| Butter, small..... | 1 60 @ 1 75 |
| Butter, large..... | 1 75 @ 1 90 |
| Pinks..... | 2 65 @ 2 75 |
| Hayos, good to choice..... | 2 90 @ 3 00 |
| Reds..... | 2 75 @ 3 00 |
| Red Kidneys..... | 2 75 @ — |
| Limas, good to choice..... | 2 75 @ 2 87 1/2 |
| Black-eye Beans..... | 3 25 @ 3 35 |
| Horse Beans..... | — @ — |
| Garbanzos, large..... | 2 75 @ 3 00 |
| Garbanzos, small..... | 1 60 @ 1 75 |

Recent advices by mail from New York furnish following review of the bean trade on

the Atlantic side, prices quoted being per bushel of 60 lbs.:

Increasing dullness has been the complaint throughout the trade this week. Buying on local account has come almost to a standstill, and the limited export orders have given no support except to one or two varieties. Most holders have asked \$1.70 for small lots of fancy Marrow, and some are still inclined to hold at that, but others have accepted \$1.67 1/2 on jobbing sales, and car lots are offering at \$1.65 without buyers. Pea have declined to \$1.32 1/4 @ 1.35 for choice quality in hhls., with receivers generally asking the outside rate. This has pulled down the price of Medium, and there is so little outlet for them that quotations must be considered largely nominal. Enough Red Kidney have been taken by exporters to keep the price fairly firm on the basis of \$2.10 f. o. b. A few choice lots have sold on the market at \$2.05, and the available supply is very moderate. Some soft beans have turned up lately, and we wish to advise shippers to dry them in the country before sending to market. The price of such stock is very uncertain. Nothing doing in White Kidney and the feeling is easier. A few lots of Turtle Soup have sold mostly at \$1.60. Yellow Eye quieter but steady. Rather better crop reports from California have made a soft market for Lima; now quotable at \$2@2.05. Green peas are 3/4c lower and very dull.

Dried Peas.

Values show steadiness for best qualities of both Green and Niles, with few such offering and no heavy supplies anticipated for some months ahead.

| | |
|-----------------------------|---------------|
| Green Peas, California..... | \$1 90 @ 2 00 |
| Niles Peas..... | 1 65 @ 1 75 |

Wool.

Buyers are not taking hold freely, either for shipment or on local account. Where transfers are effected they are within range of values below given. Although stocks are tolerably heavy, there is little or no effort to crowd wools to sale, holders feeling confident that it is only a question of a short time when there will be more activity and full current quotations will be more readily obtainable than at this date.

FALL.

| | |
|------------------------|---------|
| Northern, free..... | 10 @ 12 |
| Southern Mountain..... | 9 @ 11 |

SPRING.

| | |
|--|---------|
| Humboldt and Mendocino..... | 15 @ 17 |
| Northern Sacramento Valley, free..... | 13 @ 15 |
| Northern Sacramento Valley, defective..... | 11 @ 13 |
| San Joaquin foothill, free..... | 12 @ 15 |
| San Joaquin foothill, defective..... | 10 @ 13 |
| San Joaquin plains and southern, 7 mos..... | 9 @ 12 |
| San Joaquin plains and southern, 12 mos..... | 8 @ 14 |
| Nevada, as to condition..... | 12 @ 15 |
| Oregon Eastern, choice..... | 12 @ 14 |
| Oregon Eastern, fair to good..... | 9 @ 11 |

Hops.

There is no evidence of any purchasing in a wholesale way, and not much jobbing trade is in progress. About 200 bales went forward to Australia per last steamer, understood to be mostly on consignment. There are offerings in this city, from first hands, which fail to draw forth a bid from buyers, which is unmistakable evidence that dealers are well stocked and do not care to purchase ahead. Values are largely nominal.

| | |
|--------------------------------|---------|
| Good to choice, 1897 crop..... | 10 @ 13 |
|--------------------------------|---------|

An Eastern circular, coming through by recent mail from New York, thus summarizes the hop market:

Crop reports are now of growing interest. Advances from this State are generally favorable, the vine making splendid progress under better weather conditions. Prospects in California have improved since the late rains. Some of the Washington papers say that lice have appeared and that spraying will be vigorous from now on. In Oregon there is little trouble with vermin, and the complaints of missing hills are numerous. London cable and mail advices indicate a strong, healthy growth of the plant under more sunshine and warmth. Nothing in these reports is calculated to stimulate any freer buying, and the trading on the local market is about as dull and unsatisfactory as it has been for a month past. Stocks are pretty well controlled, however, and this has prevented any pressure to sell the desirable grades, which are held generally steady as quoted. The poorer qualities have been seeking custom without much regard to price. A good many of these low-grade Pacifics have been moved from the docks to the stores this week, and there are more of them than was supposed. It is now generally believed that the announcement of a 2c per lb. rate on hops from the main shipping points on the Pacific coast will go into effect July 1.

Hay and Straw.

New hay is arriving much more freely than the demand for the same warrants, and market is weak, with quotations averaging lower than last noted. Much of the new hay arriving is under choice, and it is the exception where it is desirable for storing. Old hay is now in quite limited stock, and buyers in search of this sort find it necessary as a rule to pay full current figures. Straw market was

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tolerably firm, but that it will long continue so is doubted.

NEW HAY.

| | |
|--------------|---------------|
| Wheat..... | 16 00 @ 19 00 |
| Barley..... | 12 50 @ 14 00 |
| Oat..... | 13 00 @ 16 00 |
| Alfalfa..... | 12 00 @ 13 00 |

OLD HAY.

| | |
|----------------------|---------------|
| Wheat..... | 18 00 @ 21 50 |
| Wheat and Oat..... | 17 00 @ 20 00 |
| Oat..... | 17 00 @ 19 00 |
| Barley..... | 15 00 @ 18 00 |
| Timothy..... | 19 00 @ 23 00 |
| Compressed..... | 55 @ 90 |
| Straw, 1/2 bale..... | — @ — |

Millstuffs.

Bran was not in very heavy stock and brought nearly as good figures as preceding week. Middlings were in limited supply, but offerings were sufficient for immediate requirements. Tendency on rolled barley and milled corn was to easier figures.

| | |
|---------------------|---------------|
| Bran, 1/2 ton..... | 15 00 @ 16 50 |
| Middlings..... | 17 50 @ 20 00 |
| Barley, Rolled..... | 24 50 @ 25 00 |
| Cornmeal..... | 23 50 @ 24 00 |
| Cracked Corn..... | 24 50 @ 25 00 |

Seeds.

Mustard seed of all sorts is in very light stock and stiff prices are being demanded for the same. Flaxseed is in light supply and market is about as firm as previously quoted. In the line of bird seed, a firmer market is noted for canary, other kinds remaining unchanged.

| | |
|----------------------------|-------------|
| Mustard, Yellow..... | 4 25 @ 4 50 |
| Mustard, Trieste Seed..... | 4 50 @ 4 75 |
| Mustard, Wild Brown..... | 3 25 @ 3 50 |
| Flax..... | 2 25 @ — |

| | |
|--------------------|---------------|
| Canary..... | 2 1/2 @ 3 |
| Rape..... | 2 1/2 @ 3 |
| Hemp..... | 2 1/2 @ 3 1/4 |
| Alfalfa, Utah..... | — @ — |

Bags and Bagging.

Grain bags are meeting with fair demand at current rates, but there is no scarcity of supplies and not the least likelihood of there being any shortage this season. In Wool sacks there is no business at present. Trading in Gunnies, Fruit sacks and Bean bags is insignificant and at same range of values as in force for some time past. These latter descriptions are likely to meet with more active inquiry a little later on.

| | |
|---------------------------------------|---------------|
| Calcutta Grain bags, 22x36, spot..... | 5 @ 5 1/4 |
| State Prison bags, per 100..... | 4 85 @ — |
| Wool sacks, 1 lb..... | 30 @ — |
| Wool sacks, 3/4 lb..... | 27 @ — |
| Gunnies..... | 9 1/4 @ 10 |
| Bean bags..... | 4 1/2 @ 4 3/4 |
| Fruit sacks, cotton..... | 5 1/4 @ 6 |

Hides, Pelts and Tallow.

The firmer prices last quoted for Hides continue to prevail. Pelts are without quotable change, but market is not particularly firm. Tallow is in good request at ruling rates.

Honey.

Business in this article is of a light order, necessarily so on account of the very limited supplies now on market. There will be very little honey over and above local requirements the current season. Market is firm in tone, with quotable values in same position as at date of former review.

| | |
|------------------------------|---------------|
| Extracted, White Liquid..... | 5 1/4 @ 6 |
| Extracted, Light Amber..... | 4 1/2 @ 5 1/4 |
| White Comb, 1-lb frames..... | 8 1/2 @ 10 |
| Amber Comb..... | 6 1/2 @ 7 1/4 |

Beeswax.

A moderate inquiry is observable, but prices obtainable show no improvement over the figures lately quoted.

| | |
|---------------------------|---------|
| Fair to choice, 1 lb..... | 23 @ 25 |
|---------------------------|---------|

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Live Stock and Meats.

Beef is commanding steady rates, with no excess of supplies of prime to choice stock. Mutton is without radical change, although the tendency has been to slightly easier rates, particularly on Wethers. Hogs are still bringing stiff prices, and will doubtless do so for some months to come, being in light supply throughout the interior of the State.

| | |
|-------------------------------------|---------------|
| Beef, 1st quality, dressed, net lb. | 6 @ 6 1/2 |
| Beef, 2d quality | 5 @ 5 1/2 |
| Beef, 3d quality | 4 @ 5 |
| Mutton—ewes, 7@—c; wethers | 7 1/2 @ 7 1/2 |
| Hogs, hard grain fed, medium | 5 @ 5 1/2 |
| Hogs, small | 4 1/2 @ 5 |
| Hogs, large hard | 4 1/2 @ 4 3/4 |
| Hogs, feeders | 4 @ 4 |
| Hogs, country dressed | 5 1/4 @ 5 1/2 |
| Veal, small, lb. | 6 @ 7 1/2 |
| Veal, large, lb. | 6 @ 6 |
| Lamb, Spring, lb. | 8 @ 8 1/2 |

Poultry.

Eastern poultry was again in liberal receipt this week, and domestic in consequence went at rather low figures. Some extra large and generally superior fowls sold to very fair advantage, as such invariably do, bringing an advance on figures warranted as a regular quotation, but for the ordinary run of poultry the market lacked firmness, offerings moving slowly at the rather low figures prevailing.

| | |
|-------------------------------|-------------|
| Turkeys, live hens, lb. | 10 @ 11 |
| Turkeys, live gobblers | 10 @ 11 |
| Hens, Cal., doz. | 3 00 @ 4 00 |
| Roosters, old | 3 50 @ 4 00 |
| Roosters, young, (full-grown) | 6 00 @ 7 00 |
| Fryers | 4 00 @ 4 50 |
| Broilers, large | 3 50 @ 4 00 |
| Broilers, small | 2 25 @ 3 00 |
| Ducks, young, doz. | 3 00 @ 4 50 |
| Ducks, old | 3 00 @ 3 50 |
| Geese, pair | 7 50 @ 1 00 |
| Goslings, pair | 1 00 @ 1 25 |
| Pigeons, Old, doz. | 1 00 @ 1 25 |
| Pigeons, Young | 1 25 @ 1 50 |

Butter.

Values remain at about same range as a week ago. Defective qualities are in liberal supply, and for these the market is weak and irregular. Choice to select is not arriving in large quantity, but demand is on the decrease, owing to many city consumers being now in the country. The lighter inquiry fully offsets the reduction in supply. Packed butter is ruling fairly steady. There is considerable Eastern now here and on the way.

| | |
|--------------------------------|----------|
| Creamery extras, lb. | @ 19 |
| Creamery firsts | @ 18 1/2 |
| Creamery seconds | @ 17 1/2 |
| Dairy select | @ 17 1/2 |
| Dairy seconds | @ 15 |
| Dairy, soft and weedy | @ 14 |
| Mixed store | @ 14 1/2 |
| Creamery in tubs | @ 18 1/2 |
| Firkin, Cal., choice to select | @ 18 1/2 |
| Firkin, common to fair | @ 15 |

Cheese.

There is no active inquiry at present, either on local or outside account. Stocks are more than sufficient for existing needs, and concessions to buyers are of rather common occurrence, especially where transfers of desirable size are effected. Some very select brings in a small way an advance on quotations.

| | |
|------------------------------|-----------|
| California fancy flat, new | 9 @ 9 1/2 |
| California, good to choice | 8 @ 9 |
| California, fair to good | 7 1/2 @ 8 |
| California Cheddar | 9 @ 11 |
| California, "Young Americas" | 9 @ 11 |

Eggs.

The crowding of prices upward, as noted last week, was a little premature. It was done mainly to benefit importers of Eastern eggs, enabling the latter to be worked off at a profit, while the home article was allowed to accumulate in the hands of receivers. There have been tolerably heavy receipts within the past fortnight, a large proportion of these eggs going into cold storage for use later in the season.

| | |
|--|---------|
| California, select, large white and fresh | 17 @ 18 |
| California, select, irregular color & size | 15 @ 16 |
| California, good to choice store | 13 @ 14 |
| Eastern, as to section and grading | 13 @ 15 |

Vegetables.

Market is well supplied with most descriptions of summer vegetables, and values have in the main ruled favorable to buyers. Onions of the Red variety will soon be out of favor and out of season. Yellow and White onions are beginning to come forward, and these will naturally receive the preference. Corn was in increased receipt and sold at a decline. Tomatoes were lower. The tendency on Beans, Squash, Egg Plant, Cucumbers and Peppers was in favor of buyers.

| | |
|-------------------------------------|---------------|
| Asparagus, No. 1 to choice, lb. box | 1 50 @ 2 00 |
| Asparagus, common to fair, lb. box | 50 @ 1 00 |
| Beans, String, lb. | 3 @ 5 |
| Beans, Lima, lb. | @ 5 |
| Beans, Refugee, lb. | @ 5 |
| Beans, Wax, lb. | 3 @ 5 |
| Cabbage, choice garden, 100 | 60 @ 70 |
| Cauliflower, doz. | 50 @ 60 |
| Corn, Green, doz. | 12 1/2 @ 20 |
| Corn, Alameda, lb. crate | @ 20 |
| Cucumbers, lb. small box | 75 @ 90 |
| Egg Plant, lb. | 8 @ 10 |
| Garlic, lb. | 2 @ 3 |
| Mushrooms, Buttons, lb. | @ 3 |
| Mushrooms, Wild, lb. | @ 3 |
| Okra, Dried, lb. | @ 1 |
| Onions, Yellow, good to choice | 75 @ 1 00 |
| Onions, New Red | 50 @ 80 |
| Peas, Sweet, Garden, lb. | 1 1/4 @ 2 1/4 |
| Peas, Sweet, sack | 1 00 @ 1 50 |
| Peppers, Green Chile, lb. | 8 @ 10 |
| Rhubarb, ordinary, lb. box | 50 @ 60 |
| Rhubarb, Mammoth, lb. box | 75 @ 90 |
| Squash, Summer, small box | 60 @ 70 |
| Squash, Summer, Bay, large box | 1 25 @ 1 75 |
| Tomatoes, lb. box or crate | 75 @ 1 00 |

Potatoes.

New potatoes are coming forward quite freely, and, with quality steadily improving, they are receiving more attention from consumers, being in fair request for shipment as well as for local use. Values kept at a low range, this being necessary to prevent serious accumulations. Old potatoes continue to be offered, only in small quantities, however, but the demand is lighter than the supply.

| | |
|-------------------------------------|------|
| Burbanks, River, sack | @ 40 |
| Burbanks, Petaluma and Tomales, cti | @ 40 |
| Burbanks, Humboldt, cti | @ 40 |

| | |
|---|---------|
| Burbanks, Oregon, lb. cental | 40 @ 70 |
| Garnet Chile, Oregon | @ 40 |
| New Potatoes, in sacks, lb. cental | 55 @ 80 |
| New Potatoes, River, in boxes, lb. cental | 60 @ 90 |
| Sweet River, lb. cental | @ 40 |
| Sweet Merced | @ 40 |

The Fruit Market.

Fresh Fruits.

Values for the different kinds of fresh fruit now in season have varied considerably since last review. Apricots were in materially increased receipt, and prices averaged lower than preceding week, contrary to general expectations. Canners will probably have to be depended on to relieve the market of the surplus. Contracts have been made in the interior on canning account at \$40 for choice Royals, but little of the fruit received in this center thus far this season would come up to this standard. Peaches have not been arriving freely, and market ruled firm, especially for choice to select, desirable for the best city trade, or for stock suitable for shipment. Fancy Clings are being sought after on canning account and are being contracted for at \$60 @ 65 per ton, but none of these have yet appeared on market, as they belong to the later varieties. Plums sold at a rather wide range, a few very choice bringing tolerably good prices, while small and ordinary dragged at rather low figures. Cherries were in reduced supply, but values for most offerings continued on much the same low and unsatisfactory plane as during previous week. A few very select brought an advance on quotations. Gooseberries were not in heavy supply, but demand was light and there was no quotable improvement in prices. Blackberries and Raspberries went at a decline. Strawberries sold at a wider range than ordinarily, fine Longworths bringing comparatively stiff prices.

| | |
|--|-------------|
| Apricots, Pringle, lb. box | @ 40 |
| Apricots, Royal, lb. box | 50 @ 65 |
| Apples, green, small box | 30 @ 50 |
| Cherries, Royal Anne, lb. box | 2 @ 3 |
| Cherries, Royal Anne, lb. box | 30 @ 40 |
| Cherries Black, in bulk, lb. box | 2 @ 4 |
| Cherries White, in bulk, lb. box | 1 @ 2 1/2 |
| Cherries, Black, fair to choice, lb. box | 25 @ 50 |
| Cherries, White and Red, lb. box | 20 @ 30 |
| Blackberries, lb. chest | 3 00 @ 5 00 |
| Raspberries, lb. chest | 4 00 @ 7 00 |
| Raspberries, lb. crate | @ 7 |
| Figs, Black, 2-layer box | 50 @ 1 00 |
| Figs, White, 2-layer box | 40 @ 65 |
| Gooseberries, lb. box | 1 @ 2 |
| Gooseberries, English, lb. box | 3 @ 4 |
| Strawberries, Longworth, lb. chest | 7 00 @ 9 00 |
| Strawberries, Large, lb. chest | 3 00 @ 4 00 |
| Peaches, Early Freestone, lb. box | 50 @ 75 |
| Plums, as to size, lb. box | 30 @ 75 |
| Plums, Cherry, lb. drawer | @ 20 |
| Prunes, lb. box or crate | 70 @ 90 |

Dried Fruits.

The market for cured and evaporated fruits continues quiet, and it is only natural that such a condition of affairs should exist at this particular time, as it is just between seasons, with both producers and dealers at sea concerning the future. Stocks of old are insignificant, aside from Prunes, Peaches and Raisins, and there is little or no purchasing of these kinds, except in a small way to cover most immediate needs. Values remain nominally as previously quoted, but full current quotations could not be obtained on selling pressure. There is a very firm tone to the market for new Apricots, but beyond this the future is not being foreshadowed at present with any distinctness. Some new Apricots have been offered for forward delivery at 8 1/2c for prime quality Royals. New quartered Pears, prime, have been offered at 4 1/2c on contract. Some attempts are being made to contract new crop Prunes, but so far as can be learned nothing in this line has been yet accomplished this season. There is little disposition shown to contract, most parties concerned deeming it better to await developments.

EVAPORATED OR BLEACHED.

| | |
|---|---------------|
| Apricots, Royal, in sacks, per lb. | 6 1/2 @ 8 |
| Apricots, Royal, fancy | 8 1/2 @ 9 |
| Apricots, Moorpark | 9 @ 11 |
| Apples, in boxes | 6 1/2 @ 7 |
| Figs, fancy pressed | 8 @ 10 |
| Nectarines, White | 4 1/2 @ 5 |
| Nectarines, Red | 3 1/2 @ 4 |
| Peaches, unpeeled, choice | 4 1/2 @ 5 |
| Peaches, unpeeled, fancy | 6 @ 6 1/2 |
| Peaches, peeled, in boxes | 10 @ 12 1/2 |
| Pears, unpeeled Bartlett's, halved, fancy | @ 5 |
| Pears, halved, unpeeled Bartlett's | @ 5 |
| Pears, quartered, unpeeled Bartlett's | 4 @ 5 |
| Pears, peeled and sliced | @ 4 |
| Prunes, pitted | 5 @ 6 |
| Prunes, in sacks, 40-50's | 5 1/2 @ 6 |
| 50-60's | 4 1/2 @ 4 1/4 |
| 60-70's | 3 1/2 @ 3 3/4 |
| 70-80's | 3 @ 3 1/4 |
| 80-90's | 2 1/2 @ 3 |
| 90-100's | 2 @ 3 |

Above figures are on basis of 3 1/4 @ 3 1/2 for 4 sizes. Prunes in boxes, 1/4c higher for 25-lb boxes, 1/4c higher for 50-lb boxes.

| | |
|----------------------------------|-----------|
| 4 sizes Santa Claras and equal | 3 1/2 @ 4 |
| 4 sizes San Joaquin and Northern | 3 @ 4 |
| Prunes, Silver | 4 @ 7 |

COMMON SUN-DRIED.

| | |
|--------------------|-----------|
| Apricots, ordinary | 5 @ 6 |
| Apples, sliced | 4 @ 4 1/2 |
| Apples, quartered | 4 1/2 @ 5 |
| Figs, Black | 3 @ 3 1/2 |
| Figs, White | 3 @ 4 |
| Peaches, unpeeled | 3 1/2 @ 4 |
| Plums, unpeeled | 1 @ 1 1/2 |

According to mail advices of late date from New York, the dried fruit market in the East is as follows:

Stocks of evaporated apples have been well reduced and market is quiet under light trade, though desirable fruit is held with more or less confidence, occasionally slightly higher than quoted for strictly prime wood-dried. Sun-dried apples have had some call, mainly for the West and Southern quarters, and sliced are held steadily, though State quarters are dull and weak. Chops have weakened to 4 @ 4 1/2c and cores and skins 2 1/4 @ 2 1/2c, with outside figure for both extreme. Further business is reported in futures at slightly lower prices; prime evaporated apples are now being offered for October and November delivery at 6c, and chops 2 1/2c for same month's delivery, with 2c bid for latter, with waste offered at 1 1/2c and 1 1/4c bid. Small fruits are in light supply, but with demand limited market is quiet and values somewhat nominal. California fruit firm.

| | |
|--|-----------|
| Apricots, Cal. Moorpark, 1897, per lb. | 10 @ 13 |
| Apricots, Cal. Royal, 1897, per lb. | 8 @ 10 |
| Peaches, Cal., 1897, peeled, per lb. | 10 @ 16 |
| Peaches, Cal., 1897, unpeeled, per lb. | 5 @ 9 |
| Pears, Cal., 1897, per lb. | 5 @ 10 |
| Prunes, Cal., 1897, per lb. | 4 @ 8 1/2 |

Raisins.

The market for Raisins is without noteworthy change for loose or seedless Muscatel, asking rates remaining as before, with movement very light. Sultanias are quotably lower and in very limited request.

F. O. B. FRESNO DELIVERY.

| | |
|----------------------------------|---------------|
| Imperial Clusters, per box | @ 1 |
| Dehesa Clusters, per box | @ 1 |
| Fancy Clusters, per box | @ 1 |
| Boxes, London layers, 20-lb box | 1 00 @ 1 |
| (Usual advance for fractions.) | |
| Loose Muscatel, 4-crown, lb. box | 3 1/2 @ 4 |
| Loose Muscatel, 3-crown | 2 1/4 @ 2 1/2 |
| Loose Muscatel, 2-crown | 1 1/2 @ 2 |
| Sultanias | 2 1/2 @ 3 |
| Seedless Muscatel | 1 1/2 @ 2 |
| Dried Grapes | 1 @ 1 1/2 |

Citrus Fruits.

Orange market is heavily stocked for this late date in the season, and is weak at the reduced quotations, the call for this fruit being now light. On the other hand, Lemons are in good request and are bringing improved prices. Limes were fairly plentiful, with market somewhat easier than last quoted.

| | |
|------------------------------|-------------|
| Oranges—Navel, lb. box | 1 25 @ 2 75 |
| St. Michaels | @ 2 |
| Seedlings | 50 @ 1 25 |
| Tangerines, half box | @ 1 |
| Lemons—Cal., select, lb. box | 2 25 @ 2 50 |
| Cal., good to choice | 1 50 @ 2 00 |
| Cal., common to good | 1 00 @ 1 50 |
| Limes—Mexican, lb. box | 3 50 @ 4 00 |
| Cal., small box | 75 @ 1 00 |

Nuts.

Almonds are in light stock and will continue so throughout the approaching season. Walnuts are still in fair supply, but offerings are mainly under choice. New crop promises well as to quantity. Peanuts are commanding steady rates. Quotations throughout are unchanged.

| | |
|---------------------------------|---------------|
| California Almonds, paper shell | 9 @ 10 |
| California Almonds, soft shell | 7 @ 8 1/2 |
| California Almonds, hard shell | 4 @ 4 1/2 |
| Walnuts White, paper shell | 8 @ 9 |
| Walnuts White, soft shell | 8 @ 9 |
| Walnuts White, Cal., standard | 6 @ 7 |
| Chestnuts, Cal. Italian | @ 7 |
| Peanuts, Cal., fair to prime | 3 1/4 @ 4 1/2 |
| Peanuts, Eastern hand-picked | 5 @ 6 |
| Pine Nuts | 7 @ 8 |

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|----------------|--------------------|----------------------|
| Flour, 4-sks. | 128,134 | 5,177,441 |
| Wheat, cts. | 22,885 | 10,363,032 |
| Barley, cts. | 23,075 | 4,546,728 |
| Oats, cts. | 1,470 | 689,620 |
| Corn, cts. | 5,200 | 391,748 |
| Rye, cts. | 180 | 49,101 |
| Beans, sks. | 1,443 | 570,588 |
| Potatoes, sks. | 21,098 | 1,136,123 |
| Onions, sks. | 4,525 | 120,091 |
| Hay, tons | 1,993 | 123,510 |
| Wool, bales | 1,691 | 74,580 |
| Hops, bales | 193 | 9,318 |

EXPORTS.

| FOR THE WEEK. | Since July 1, '97. | Same Time Last Year. |
|-----------------|--------------------|----------------------|
| Flour, 4-sks. | 19,208 | 3,202,188 |
| Wheat, cts. | 94 | 9,796,515 |
| Barley, cts. | 5,052 | 3,011,535 |
| Oats, cts. | 1,713 | 22,354 |
| Corn, cts. | 47,828 | 59,427 |
| Beans, sks. | 318 | 302,206 |
| Hay, bales | 2,730 | 80,712 |
| Wool, lbs. | 14,241,776 | 19,024,249 |
| Hops, lbs. | 42,979 | 1,431,453 |
| Honey, cases | 10 | 7,466 |
| Potatoes, pkgs. | 1,601 | 185,724 |

Prices quoted in this review are intended, unless otherwise specified, to represent wholesale values, obtainable on offerings from the producer, and on round lots delivered at San Francisco. The reviews of the markets for the week ending Wednesday noon, while quotations are based on values current on above dates. It is the aim of THE PACIFIC RURAL PRESS to have its quotations represent as nearly as possible the existing values. It should be remembered, however, that at times, owing to the superior merit of offerings, undue competition between buyers, or other reasons, higher figures are realized than are justified as quotations. On the other hand, produce of decidedly inferior quality is apt to be sold at less than lowest figures.

Eastern Sales of California Fruit.

NEW YORK, June 18.—The Earl Fruit Company sold California fruit to-day: Cherries—Royal Anne, 65c @ 70c; Oregon, 70c @ 75c; Peaches—Alexander, 45c @ 50c; Apricots—Royal, 65c @ 70c; Newcastles, 40c @ 55c; Prunes—Tragedy, 1.05 @ 1.25; Clyman, 80c @ 1.55; Koenig, 75c @ 1.25.

CHICAGO, June 18.—Porter Brothers Company sold California fruit to-day: Prunes—Tragedy, 1.15 per single crate. Apricots, Royals, 1.05 @ 1.35 per single crate. Plums—Clymans, 65c @ 1.15 per single crate. Peaches—Alexander, 40c @ 75c per box. Cherries—Royal Anne, 51c @ 1.35 per box; Tartarians, 25c @ 1.05; Republicans, 75c; Centennials, 25c @ 75c.

NEW YORK, June 20.—The Earl Fruit Company sold California fruit to-day: Peaches—Briggs' May, 80c @ 1.15; Alexander, 80c @ 1.15; Plums—Clymans, 90c @ 1.35; Cherries—Royal Anne, 45c @ 1.05; Black Republican, 75c @ 1.10; Bigareaus, 70c @ 95c; Centennial, 60c @ 85c; Pontiac, 75c.

CHICAGO, June 20.—The Earl Fruit Company sold California fruit to-day: Peaches—Alexander, 65c @ 75c; Cherries—Pontiac, 50c @ 65c.

NEW YORK, June 21.—Porter Bros. Company sold to-day at open auction California fruit at the following prices: Plums—Burbanks, \$3.15 @ 3.37 single

crate; Peach, \$1.80 @ 2.15; Abundance, \$1.90 @ 1.95; Clyman, \$1.05 @ 1.45; Royal Native, 75c @ 1.15; St. Catharines, 90c @ 95c. Figs—\$2.37 per ten-pound box. Prunes—Tragedy, 1.30 @ 2.15 single crate; Simoni, 1.30 @ 1.90; Peaches—Alexander, 70c @ 1.70 box; Governor Garlands, 75c @ 95c; Hale's Early, 70c @ 95c. Apricots—Moorpark, 1.65 single crate; Royals, 90c @ 1.60; Blenheim, 1.35; Lemon, 1.30. Cherries—Bigareaus, 60c @ 1.40 per box; Royal Anne, 65c @ 1.35; Tartarians, 35c @ 1.25; Fancy, 1.25; Assorted, 1.20; Centennials, 55c @ 1.25; other varieties, 50c @ 70c.

CHICAGO, June 21.—Porter Bros. Company sold to-day at open auction California fruit at the following prices: Prunes—Tragedy, 1.20 @ 1.50 single crate; Simoni, 1.60. Plums—Abundance, 1.50 single crate; Clymans, 1.05 @ 1.30; Royal Native, 85c @ 1.10 single crate and 65c per box; St. Catharines, 1 per single crate; Cherry, 90c. Cherries—Royal Anne, 75c @ 1.35 per box; Fancy, 40c @ 1.20; Black Bigareaus, 50c @ 1.15; Napoleon Bigareaus, 85c @ 90c; Tartarians, 20c @ 1.15; Republicans, 1.10; other varieties, 25c @ 75c. Peaches—Alexander, 20c @ 1 per box. Hale's Early, 60c @ 85c; Governor Garlands, 75c.

California Dried Fruit at New York.

NEW YORK, June 22.—California dried fruits quiet; apples steady. Evaporated apples, common, 7 1/2 @ 8c lb.; prime wire tray, 9 @ 9 1/2c; wood dried prime, 9 1/2c; choice, 9 1/2c; fancy, 10c. Prunes, 4 @ 8 1/2c lb. Apricots, Royal, 8 @ 10c; Moorpark, 10 @ 12c. Peaches, unpeeled, 6 @ 9c; peeled, 12 @ 15c.

The Improved Beck Fruit & Vegetable Evaporator.

In order to prove the superiority of the above-named Evaporator over all others, I hereby offer to donate to any charitable institution which the publisher of this paper may designate, the sum of ONE THOUSAND (\$1,000.00) DOLLARS if my machine fails to evaporate in the very best manner 30% more fruits or vegetables of any and all sorts in any given time and with 30% less fuel than any other so-called evaporator now on the market, provided, that any machine competing shall be of equal capacity with mine, and that the competitor shall donate the sum of FIVE HUNDRED (\$500.00) DOLLARS in like manner as above if I succeed in my undertaking.

In addition, I desire to say that I will give to any purchaser of my machines a written guarantee that they are all and will do all that I claim for them. [Signed] THOMAS BECK, Watsonville, Cal.

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AGRICULTURAL SCIENCE.

Green Manuring.

By J. W. MILLS, of the Southern California Experiment Station of the University, at the Escondido Farmers' Institute.

Humus.—Some of our fruit growers who have heavy soil object to planting green manuring crops in their orchards, because such ground takes up water slowly and parts with it rapidly unless it is well tilled. Heavy land would be benefited by green manuring as much, if not more, than any other class. Green crops plowed under add humus to the soil. Humus possesses the power of retaining moisture to a remarkable extent, and holds in available condition a very large percentage of the scarce and necessary ingredients of the soil that go to make a well proportioned crop. Humus contains from 1 to 5 per cent of the phosphoric acid of the average soil. Barnyard manure is a valuable source of humus where it is inconvenient to raise a green crop, but still it has its objections.

At the Grignon experiment station in France large glazed casks were placed on tripods in a ditch. The tops of the casks were level with the surrounding field, so as to obtain as near as possible natural conditions. Vessels were placed underneath to catch the drainage water from the casks. Part of the casks were filled with earth from a field that had been fertilized with barnyard manure, and part were filled with earth naturally rich in humus. During one year the soil fertilized with barnyard manure lost 51.7 grains of nitrogen, while the soil rich in humus lost 17.6 grains of nitrogen. This seems to render conditional the old adage, "the true foundation of successful agriculture is the manure pile."

In heavily manured soil one-seventh to one-fourth of the nitrogen that was made available was washed out in one year. If the nitrogen from this source is so easily lost, we must look for something additional with which to supply our soil with humus and nitrogen. "Nitrogen from inorganic sources is as easily lost, and mineral manures (U. S. Exp. Sta. Record, Vol. V.) never restore the original productiveness of the soil." It produces no humus, and the loss of humus from your soil means its loss of power to retain moisture and nitrogen and the loss of power to assimilate phosphoric acid and potash and make it available to plant life.

If humus is such a desirable thing, let us look into the subject and see how it gets in the soil through nature. You have seen land that has been given an abundant water supply by some new agency; it produces rank growths of vegetation that fall down year after year. It is not long till the soil takes on a dark color, and year after year the vegetation becomes ranker and more luxuriant. Some of our richest lands are formed this way. What, then, can we do to our cultivated land that we may give it this life-giving element—humus. Nature lets the weeds grow, but in most cases we fight them. It has been demonstrated that weeds not only supply humus, but during their life they help to retain in the soil that most evasive and subtle element, nitrogen.

At the experiment station referred to above, different casks were filled with the same kind of soil. In part of them thick growing plants, such as mustard and rape, were grown, while in other casks nothing was allowed to grow. It was found that the soil in which nothing grew lost five times as much nitrogen as that in which the plants were growing. The catch-plants save the nitrogen in the soil in two ways—first, by using up the nitrogen almost as fast as it is made available, and second, by taking a large part of the water and evaporating it through their leaves instead of letting it pass through the soil and take the nitrogen with it.

Leguminous Plants.—There is a vast difference in plants that makes some more desirable for green manuring than others. It is a well established fact that leguminous plants have the power, under certain conditions, to assimilate the free nitrogen from the atmosphere. This is known to be due to certain bacteria that form galls on the roots of legumes and in some way these germs extract the nitrogen from the air and the plants take it up. Leguminous plants that are grown in soil free from germs will not make a rank growth, and if the soil is free from nitrogen, the plant will make a poor effort to grow and contain no more nitrogen than the original seed contained, while, on the other hand, if they are grown in soil that is free from nitrogen, and the young plants are inoculated with the germs that grow well in that particular variety, they will take on a rank growth and the plant will contain many times the amount of nitrogen that the original seed contained. In most cases only closely related legumes can be inoculated with the same germ. Experiments were made in Germany with growing the bacteria that forms the nodules on sweet clover, in a medium made from sweet clover and corn. After these germs had been grown successfully in this medium for some time, pop corn, field corn and oats were inoculated with the culture. "The modified culture gave increased nutritive changes in the corn, but the oats were unaffected."

Inoculating Legumes.—The most practical way of

inoculating legumes for a green crop is to scatter soil in which the plants have previously grown on the land which you wish to produce the crop of vegetation. Experiments were made at Luptitz, in Saxony, by M. Schultz, where he inoculated lupins by sowing earth in which lupins had previously grown, at the rate of 1600 pounds on one lot, 800 pounds on another plot, and nothing on a third. The first produced three times and the second twice the amount of herbage of the third. At the same time experiments at the Grignon experiment station in France showed the new soil that was inoculated by sowing earth increased the yield of lupins from 11 per cent to 33 per cent over the same kind of soil that was not inoculated, while the same soil that was inoculated was sown on land that had previously grown lupins and failed to give an increased yield. This shows that the greater the number of the proper kind of bacteria up to a certain limit, the greater will be the production of that particular legume. The greater the yield of the green crop, the more nitrate and humus there will be incorporated in the soil.

Experiments in Green Manuring.—At the Grignon experiment station in France a plot of ground that had an average of 2.04 per cent of nitrogen to begin with, had beets and corn grown on it for three years. At the end of that time the soil contained but 1.46 per cent of nitrogen. During the next three years sainfoin (*Onobrychis sativa*) was grown, at the end of which time the soil contained 1.50 per cent of nitrogen. For the next three years sainfoin and grass were grown on the plot, when the nitrogen per cent was raised to 1.65. During the next four years grass was allowed to grow on it. At the end of this time the soil contained 1.81 per cent of nitrogen. The marked increase of nitrogen after the grass had grown was no doubt due to the presence of the innumerable roots that had literally filled the soil and took up the nitrogen as fast as it became available, but we do not know what takes place in the soil. It is nature's dark laboratory, into which no one can see.

Another experiment on three plots of equal area gave the following results: Plot on which no green corn was sown produced 1008 pounds of cotton seed; plot on which pea vine stubble was turned under, 1291 pounds of cotton seed; plot on which pea vines and stubble was turned under, 1409 pounds of cotton seed.

An experiment on wheat, in which the trials were carried on over a period of eight years, gave results as follows: From plot unfertilized, an average of 1033 pounds of wheat; from plot hemp plowed under, an average of 1206 pounds of wheat; from plot indigo plowed under, an average of 1544 pounds of wheat.

At the Delaware experiment station \$1 worth of crimson clover seed sown and plowed under at the right time added twenty-four bushels of corn per acre more than an unfertilized plot of equal area, while \$1 worth of nitrate of soda added but six bushels of corn per acre. One hundred and sixty pounds of nitrogen that is put into the soil by legumes is equal to about 1000 pounds of nitrate of soda. At the same station a plot of timothy was plowed under and land sown to rye. It produced grain at the rate of eighteen bushels to four acres. On an equal area cowpeas were plowed under and rye sown that produced ninety-three bushels per four acres, an increase of a little over 500 per cent. At Luptitz, in Saxony, the roots of rye and potatoes penetrated to a depth of 3 feet and more when sown on ground that had previously grown a crop of lupins, while on an adjoining piece of ground that had been fertilized with farm manure, but had never produced a crop of lupins, the roots penetrated but 16 to 24 inches. The plot fertilized with lupins produced 50 per cent more potatoes than the plot fertilized with stable manure, and the potatoes were more shapely.

Kind of Crops for Green Manuring.—What kinds of green manuring crops can we plant in southern California? In the Eastern States and parts of Europe green crops can be grown during the summer, for they have summer rains and do not have to cultivate to retain the moisture, as we do in this State. Consequently, we must look for something that will do all of its growing during our coldest seasons. The cowpeas of the Eastern and Southern States, and also the Velvet bean that has taken the lead in Florida as a green-manuring plant, will not do for California. They are more sensitive to frost than a tomato vine.

We have a number of native legumes that grow through our severest frosts. They are divided into two classes: Those that penetrate the soil deeply, such as lupins and sweet clover, and those whose roots branch and feed near the surface, as the true clovers and burr clover. Those having long tap roots and few laterals are valuable for light, sandy, dry soils, as they penetrate deeply and are to a certain extent drouth resisting. They are valuable also on heavy soils, as the roots decay and leave open channels through which the roots of succeeding crops can penetrate the impervious lower strata. On either kind of soil they assimilate, bring up the potash and phosphoric acid and leave them within reach of surface feeding plants, or the surface roots of deep

rooting plants. The most promising native lupin that we have in this part of the State is *T. Micranthus*. It can be found in almost any sandy place. Its roots will ordinarily penetrate 2 feet or more. Specimens were dug up at the station whose roots were nearly 4 feet long. The top has no central stem, but has innumerable branches coming from the ground. It is wonderfully productive in seeds, and they can be gathered more easily than wheat. Another variety, *L. Hirsutissimus*, that is very promising, grows in very sandy, dry places from the Sacramento valley southward. There are also other native lupins that may prove to be valuable. The European lupins give great promise at Berkeley, where they have produced eighteen or twenty tons per acre, while the native varieties have scarcely made a start. At the southern California station they gave great promise, but soon after they started to run up a parasite attacked them, when they had to make another start. Just as the first flower stalks put out bloom they were attacked again. The severe frost of March 22d damaged the remainder of the crop so extensively that it looks doubtful if they will produce any seed. With the exception of one variety from the San Joaquin valley, the native lupins are uninjured. The advantage the European lupins have over our native varieties is, that they have large, fleshy seeds that sprout in a few days, while ours have small, flinty seeds that will not sprout till weeks after they are planted, and they make a very slow growth for the first month. The extra amount of material in the seeds of the European varieties seems to give the growth of the young plants an impetus from the start and supplies them with food till they have a well established root system. Lupins are a failure on land that has even a limited supply of alkali. The best deep-rooting legume for alkali land that we know of so far, is our yellow sweet clover (*Melilotus Indica*).

For abundance of herbage, perhaps nothing will surpass the field pea, but it is a shallow rooted plant and has not the advantage of the lupin and sweet clover during a drouth, nor has it the advantages enumerated above. The Canada field pea and the blue Prussian are perhaps the two best varieties to plant. The former has proved to be the most desirable in the East and in California. Yorkshire Hero made the best growth at the Southern California station this year, but the seed is too expensive.

In this part of the State we have several varieties of native clovers that start with the first rains in the fall and make a good growth during the entire winter, if they receive an ample supply of water. Next to peas for an abundance of herbage, I would recommend lupins with clover. While the former grow erect and send their few roots deep into the earth, the latter cover the ground with a dense mat and their masses of roots fill the surface soil and more completely retain the nitrified or available nitrogen. Burr clover is perhaps the best low growing legume we have, and land once seeded to it will generally volunteer enough plants to give good crops the following years. The best way to seed land with burr clover is to use manure from flocks of sheep that have been pastured on land on which the plant grows.

When to Plant.—Whichever plant you choose, get the seed in the ground early, as our orchards must be cultivated till late in the summer. The latter part of September or the first part of October is as early as we can hope to do it, but this is none too early.

The nitrification of soils, or the process of changing to the available from the unavailable form of nitrogen in the soil, takes place more actively in the spring. At that time about half of the year's nitrification takes place. After this change it is very easily washed out of the soil, consequently the early winter rains leach out a large part of that which is lost. "The larger losses are due to the larger amounts of water which percolate through the soil. When a crop is luxuriant it evaporates a large quantity of water and the losses by drainage are consequently small. When the crop is sickly, and when its period of growth is short, the losses are very large. To leave soils barren in autumn is danderous and exhausting." (U. S. Exp. Sta. Record, 1893, vol. V, page 15.) This is one important reason why a green-manuring crop should be started early. Another equally important reason for early planting is to secure as large an amount of herbage as possible before the ground dries out in the spring. It is a good idea to plant the seed just after the ground has been irrigated the last time, then furrow out so that it can be irrigated after the crop is up, if necessary.

When to Plow Green Crops Under.—It is important that this should be done before the ground dries out in the spring, and it is not safe to wait later than the first part of March in southern California. There should be a good rain just after plowing under in order to get the best results. In the case of lupins, if not other crops, it is important to know the proper time to plow under, as is shown from experiments made at an experiment station in Germany. The lupins were plowed under at the times noted in the following table. The plots were of equal size and the soil of the same character. Aftercrops of rye were sown on each plot to determine the actual

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California's Share in Annexation.

TO THE EDITOR:—Before this war began our politicians rode a very high horse. "Humanity" was its name. It was hard for a humanitarian to object to a war waged in the name of humanity. Humanity is irreproachably unselfish and placable; like Charity, "seeketh not her own and is not easily provoked."

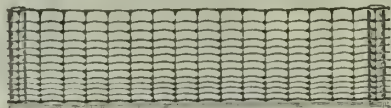
But now, already, "annexation" and "revenge" have become our passwords. The first of these words may be of very ominous import to the California farmer. As to the moral or ethical effect of annexation, I wish every true-hearted citizen could read President David Starr Jordan's address to the 1898 graduating class at Stanford. The point he makes is what effect the annexing of tropical islands will have on the American people as individuals. The object of a republic is "to make men," not to lord it over subject races of inferior breed, who necessarily become virtual slaves of their conquerors. But, apart from ethics, what will result to California from the annexation of West Indian islands? Southern California, alone, is expecting an output of 20,000 carloads of oranges, which, it is claimed, hardly remunerate the grower because of the heavy freight charges. In last week's RURAL oranges were mentioned as one of Cuba's chief exports in the fruit line. Now "annexation," as I understand it, implies the treatment of the land "annexed" as one of our own Territories or States, and involves the admission duty free of

all the annexed country's products. Cuba has an exceedingly fertile soil, perfect immunity from frost, no need of any irrigation, exceedingly cheap labor, and transportation at nominal rates as compared with southern California. What will result to orange growers? Cuba's chief export has been sugar. How will our sugar beet growers be helped by the eternal admission duty free of the Cuban product?

If we must have "annexation," in the name of "humanity" let our rulers see that the Pacific coast States, oppressed by tremendously heavy transportation rates, is also "annexed" to the Eastern seaboard by the construction of the Nicaragua canal.

Apple Prices.—In your last issue I was made to say "poor" apples sold here last winter for 60 cents a box. It should read "good" apples.

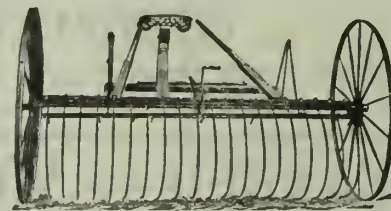
EDWARD BERWICK.
Pacific Grove, June 19, 1898.



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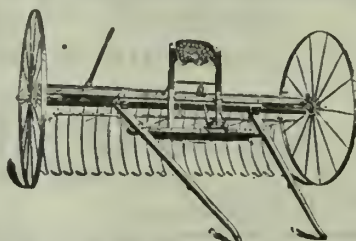


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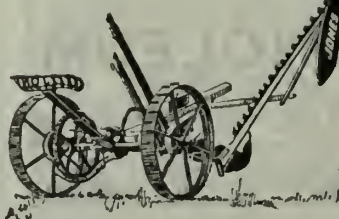


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FOR WEEK ENDING JUNE 7, 1898.

605,079.—WINDMILL—J. Coats, Olive, Cal.
 605,403.—DENTAL BRIDGEWORK—C. A. Davis, Pasadena, Cal.
 605,279.—SAFETY LOCK FOR ELECTRIC LAMP—Faller & Herbst, S. F.
 605,417.—BICYCLE STEERING HEAD—A. C. Garcia, Modesto, Cal.
 605,460.—ROTARY ENGINE—M. E. Gilbert, S. F.
 605,446.—WATER BATTERY—H. H. Gorter, S. F.
 605,251.—TROLLEY HANGER—G. E. Johnson, Los Angeles, Cal.
 605,300.—HYDROCARBON BURNER—C. R. Kittle, Los Angeles, Cal.
 605,333.—IGNITER—O. Owens, S. F.
 605,450.—NUT—R. R. Parrish, Independence, Ogn.
 605,337.—LOCK—G. L. Petrin, S. F.
 605,341.—TELEPHONE—Reid & McDonnell, Tacoma, Wash.
 605,187.—PUMPING ENGINE—E. A. Rix, S. F.
 605,345.—CALL BOX SYSTEM—Salisbury & Dean, Tacoma, Wash.
 605,238.—HOSE COUPLING—W. A. Sutfin, Marysville, Cal.
 605,358.—SIGNAL—Taylor, Salisbury & Dean, Tacoma, Wash.
 605,150.—FLUSHING TANK TRIP—E. E. Townsend, Capitola, Cal.
 605,151.—BICYCLE SADDLE—J. F. Twist, S. F.
 605,211.—TROLLEY SWITCH—J. H. Vanasselt, Seattle, Wash.
 605,440.—PENCIL SPLICER—F. W. Warren, S. F.
 605,366.—DOOR ALARM—G. D. Winters, Reno, Nev.
 605,266.—STAMP MILL FEEDER—G. Wood, Prescott, A. T.
 28,799.—DESIGN, SEAL PRESS CASE—A. H. Mackinnon, Olympia, Wash.

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Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

SAFETY LOCKS FOR INCANDESCENT LAMPS.—Ernest Faller and Hermann Herbst, San Francisco, Cal. No. 605,279. Dated June 7th, 1898. This invention relates to a locking device which is designed to prevent the surreptitious removal and stealing of incandescent light globes. These globes are ordinarily screwed into permanent sockets with which the wires connect, where the proper contacts are made, so that by turning the key the electrical current will pass through the filament and produce the light, which may be closed by reversing the movement of the key. Much annoyance and difficulty have resulted from the ease with which these globes can be disengaged from the permanent socket, and they are very often stolen or removed, so that it is necessary to supply the loss with new ones. This device is intended to prevent this surreptitious removal. It consists in forming the metallic end which is fixed upon the globe and adapted to engage with the corresponding portion of the permanent fixture, with a catch which forms one of the engaging parts and a corresponding automatically engaging tongue projecting inwardly so that it is concealed within the exterior portion of the fixture. When the globe is secured into place, the catch and tongue engage with each other and prevent the globe from being again removed until it is disabled, when it can be removed by breaking the globe so that the catch can be reached and disengaged to allow the metallic threaded portion to be removed.

PENCIL SPLICERS.—Frank W. Warren, San Francisco, Cal. No. 605,440. Dated June 7th, 1898. This invention relates to a device which is especially designed to splice or connect two different pencils, so that either two pencils of different colors or qualities of hardness may be used or to enable the person to use up short ends of pencils. It consists of a short tube internally threaded, and with the threads so cut transversely as to form a sharp angle which makes the cutting die so that the pencil can be screwed into the device and the thread will be cut upon it, which retains it in place. The ends of the holder may be made bell shape or diverging so that the pencil end can be easily introduced.

BICYCLE SADDLES.—Joseph F. Twist, San Francisco, Cal. Assignor of one-half to Lewis D. Radgesky of the same place. No. 605,151. Dated June 7th, 1898. The object of this invention is to provide a bicycle saddle having the front divided longitudinally, so as to form an open channel from the front approximately to the center of the saddle, the rear portion of which is closed, and to provide an adjustment for the saddle-front, by which the parts may be moved to or from each other to increase or diminish the space, and to adjust the saddle with reference to the rider's needs. It consists essentially of a segmental cantle, a leather covering, the rear portion of which coincides in shape with the cantle and is fixed thereto, the covering converging from the outer edges to the front end, and divided forwardly from a central point to the front to form independently adjustable pommels. These pommels have yokes connecting them transversely with slotted clamping bolts and nuts by which they may be clamped to the spring which extends beneath the saddle so that these front ends may be separated or moved beyond each other and locked in place. The saddle spring has a clamp which is adapted to be adjustably screwed to the top of the saddle posts, so that the saddle may be set at any desired angle and position with relation to the machine.

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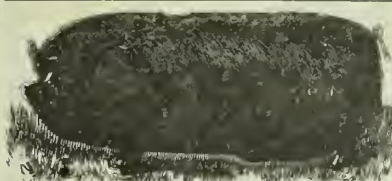
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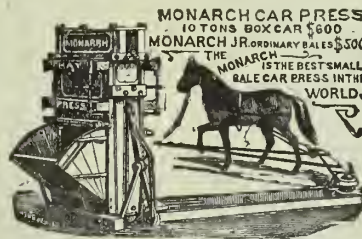
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